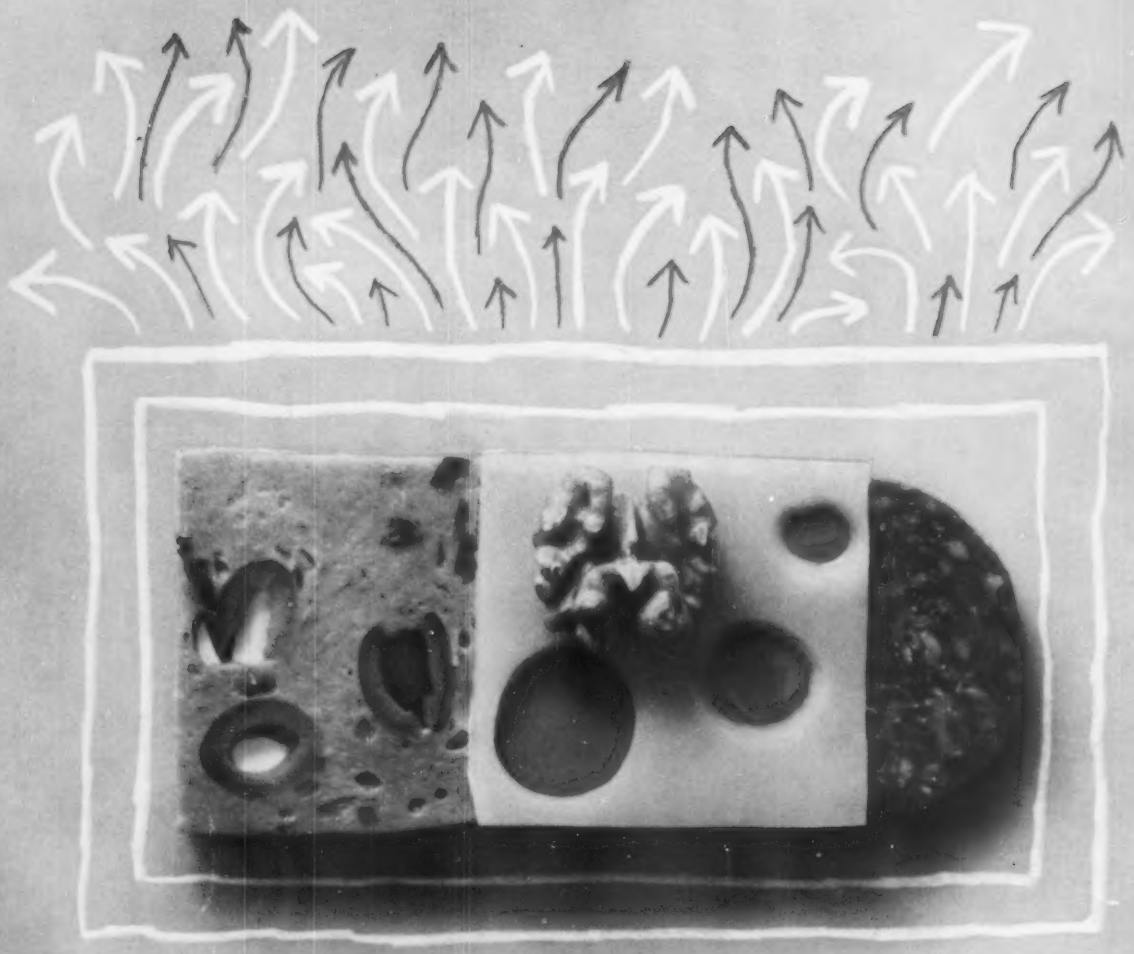
MODERN PACKAGING



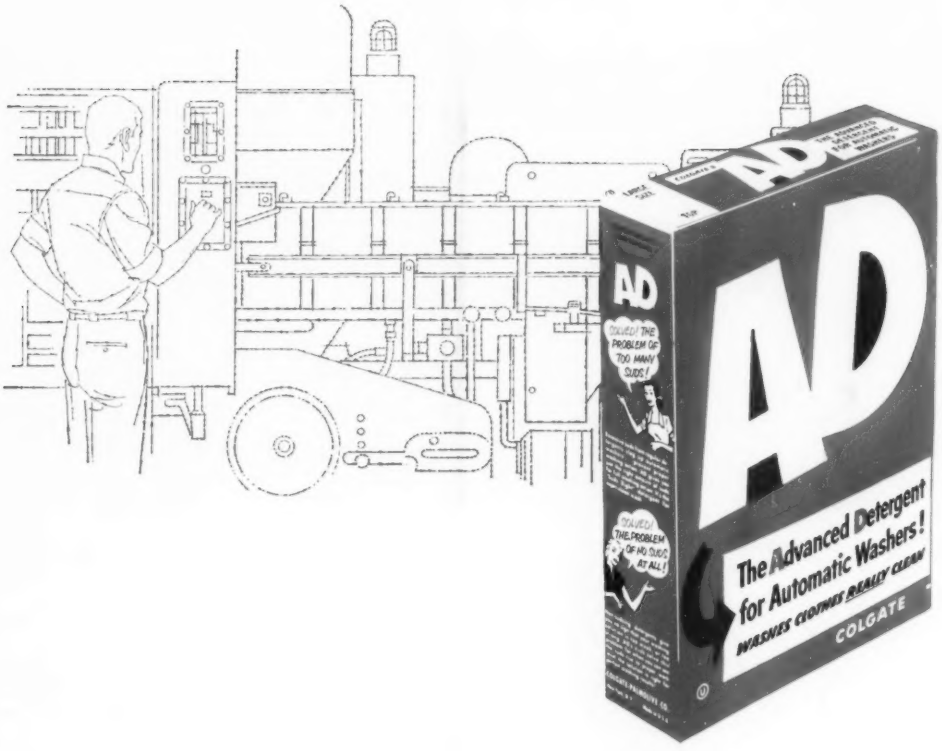
GREAT PACKAGING DISCOVERIES: *The flexible vacuum package*

For page listings of cover story and other features, see Contents, pp. 2-3

JANUARY 1960

Easi-Clean RESIN ADHESIVE

FROM THE NEW CHEMISTRY OF ADHESIVES



ELIMINATES SCRAP AND SIFTER LOSSES

EASI-CLEAN lowers packaging costs by increasing efficiency in carton sealing and forming. Improves adhesion. Eliminates pop-ups and sifters. Avoids scrap and product losses. Permits maximum machine speeds. Increases adhesive mileage.

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Packaging machine — Model CKP-2 (Patent Pending) by Crompton & Knowles Packaging Corporation

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Vitafilm *is just your dish!*

When it comes to packaging paper products, there is no transparent film on the market that does the job so well as VITAFILM.

Witness these smart and smoothly packaged paper plates made by Dixie Cup's* Kleen Products Division.

Snug wraps—strong, perfectly sealed, excellently transparent, dimensionally stable.

AND VITAFILM *doesn't attract dust* —always a real plus when merchandising containers for foodstuffs.

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Printability is fine—and adaptability to high-speed packaging operations has been proved outstanding.

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The finest in sheer protection

*A trademark of the Dixie Cup Division of American Can Company
Vitafilm, a Polyvinyl chloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

JANUARY 1960 VOL. 33 NO. 1

IN THIS ISSUE

71 **The surging '60s**
We enter a decade in packaging which doubtless will outstrip any that has gone before. The combined forces of a dynamic national economy and improving packaging technology carry the assurance of such growth. What makes the 10-year outlook particularly bright is the surge of an established marketing trend: expanding demand by dealers for care-free packages and by consumers for convenience packaging of more products in more stores. Here are the packages and materials you should watch for in the years just ahead.
General interest.

79 **Single-service foil cups**



A potentially big packaging market opens up with the introduction by J. M. Smucker of hermetically sealed aluminum-foil cups for unit portions of jams and jellies. In a new forming technique that will be seen later in larger foil containers, economical, smooth-wall cups are formed, filled and sealed on in-plant machinery at 200 per minute. Peelable, hermetically sealed lids are reported to give the cups shelf life and barrier qualities equal to glass jars.
Special interest: foods.

82 **Sterile milk in paper**
An aseptic packaging process used by Real-Fresh to package whole milk and soft drinks in air-evacuated, tetrahedral, paper-foil-polyethylene containers suggests new possibilities in long-term preservation without refrigeration for many liquid and semi-liquid products. The low-cost packages are formed, filled and sealed on an economical Swedish machine. They approximate the protection formerly achieved only with sterile, vacuum-packed metal cans.
Special interest: foods, drugs, beverages.

86 **Lederle's little men**
Molded in the shapes of a clown, an iron worker and a space man, this packager's single-dose plastic bottles for pediatric products do more than provide the promotional advantage of novelty packaging at little extra cost. They also demonstrate the protective efficiency that can now be expected of blow-molded, high-density rigid polyethylene containers.
Special interest: drugs, chemicals, toiletries, cosmetics, foods, beverages.

90 **A quality symbol at half the cost**
Are you looking for a full-color merchandising tag that bespeaks a top-quality product, yet is easy on the packaging budget? If so, A. G. Spalding's experience may be useful. Seeking such a tag for its Top Flite golf clubs, the company found the solution in a production technique that pares expenses to the bone via: a four-color-process printing operation that minimizes the cost of color separation; big-volume, multiple-order processing, and standardization in tag stock, sizes and quantities run.
Special interest: sporting goods, hardware, appliances, textiles and soft goods.

92 **The can looks to the future**
As the metal can celebrates its 150th anniversary, aluminum emerges as the industry's brightest new star. It already has proved its worth in the packaging of such mass-market products as beer and motor oil. But that is only the beginning. Reaping the benefits of improved technology for economical high-volume production, the aluminum can is approaching the point where it can compete with tinplate on the basis of cost. All signs

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OF MODERN PACKAGING®

point to a future for the metal can that will be even brighter than its first 150 years.
Special interest: foods, beverages, paints, oils.

100 **The flexible vacuum package**
A *Great Packaging Discovery*. Spurred by wartime shortages of metal cans and glass jars, the flexible vacuum package began a rapid commercial ascent in the mid-1940s. It led also to the further development of flexible gas packaging. Today this combined field uses an estimated $20 million worth of laminated films per year. The lessons learned in effective laminating and sealing have been applied to hundreds of difficult flexible-packaging problems for a vast variety of products which require protection.
General interest.

102 **A big packaging week in New York**
Record crowds turned up at PMMI's Machinery Show and at the 21st Annual Packaging Institute Forum. Visitors at the show saw evidence of three significant trends: (1) improved equipment for handling both plastic film and rigid plastic containers, (2) standard machines engineered for increased speed and efficiency and (3) a spurt in the development of machines that integrate packaging functions. PI Forum coverage includes reports on 56 papers delivered at 11 seminars.
General interest.

112 **Tough seamless tube**



How do you package a paste hair preparation that will corrode metal tubes and is too thick to dispense from a glass container? Cosmair solves the problem with a strong, tapered, saran-coated polyethylene tube that is blow molded with a closed bottom. The top-filled tube requires no heat sealing, thus avoiding package failure through product interference in the heat-seal area. A spout cap permits squeeze dispensing.
Special interest: toiletries, drugs, foods, chemicals.

TECHNICAL & ENGINEERING

115 **Machinability of polyethylene film**
Medium-density polyethylene film shows great commercial potential for overwrapping on automatic machinery. Two studies—conducted on equipment available to packagers—prove that the film can be run at existing production-line rates, with satisfactory results from the standpoints of quality and appearance. In the tests, overwrapping was done on (1) a machine expressly designed to handle polyethylene and (2) a converted machine originally intended for use with cellophane. *By William P. Gideon.*

119 **Adhesion of waxed glassine**
When glassine, which is inherently greaseproof, is coated with paraffin wax for added protection, adhesion of this important food-packaging paper to itself becomes difficult to attain. But two methods are available. Either penetration of the wax coating must be achieved or the non-porous wax surfaces must be adhered with a "suction" bond. Here is a detailed examination of the considerations involved in both approaches to the adhesion problem. *By Peter S. Columbus.*

126 **Questions & Answers**
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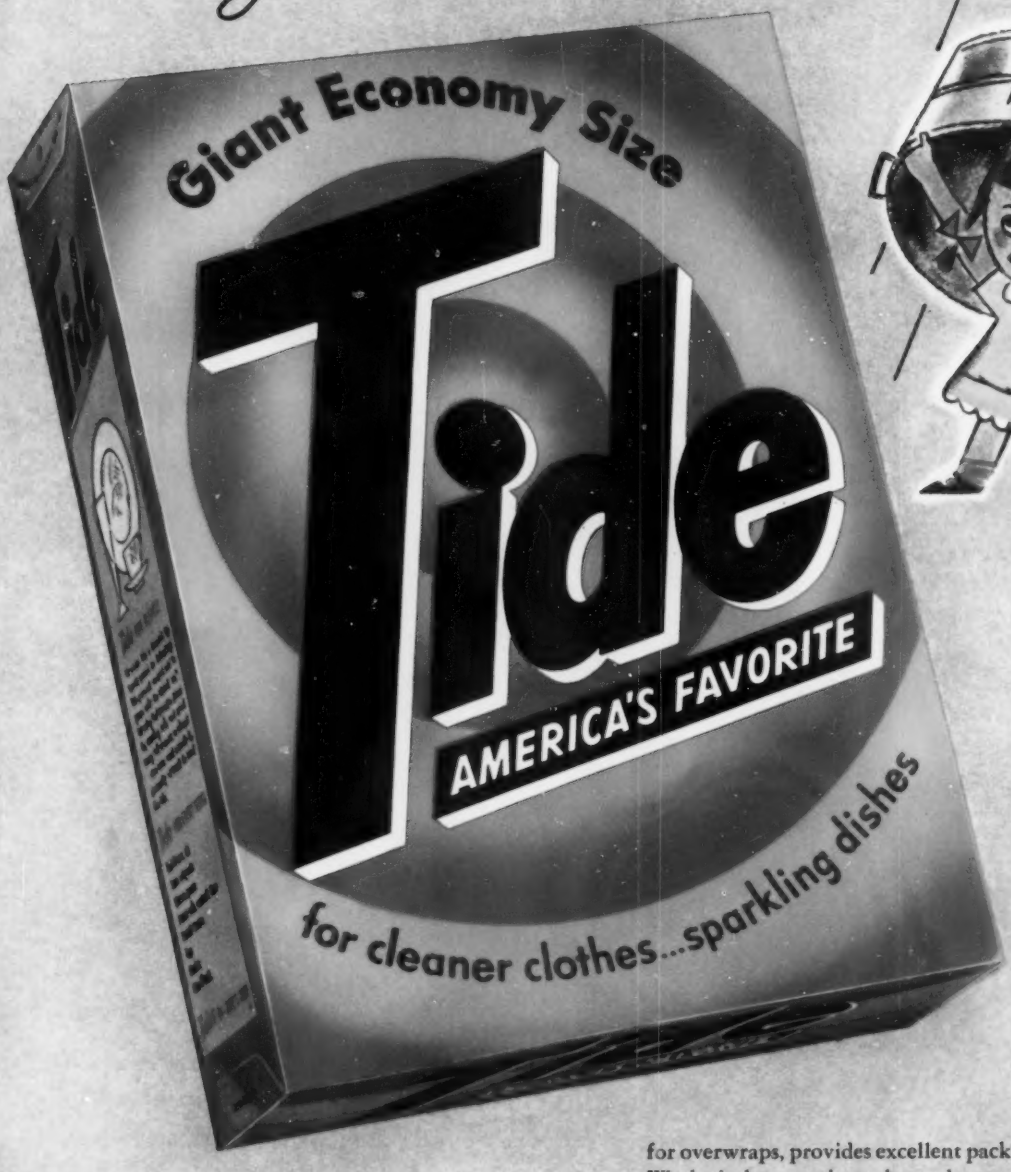
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Dobeckmun Metalseal gives maximum protection against moisture while at the same time affording an exceptional printing surface and a unique metallic appearance. A union of aluminum foil and wax impregnated paper, Metalseal packaging is a product of Dobeckmun's long experience with special laminations, package design and creative printing... is but one of a wide variety of exciting and practical packages for performance developed by The Dobeckmun Company, a Division of The Dow Chemical Company, Cleveland, Ohio • Berkeley 10, California • Offices in most principal cities.

CARTONS WITH BUILT-IN PROTECTION

by Sutherland





Procter and Gamble's moisture barrier problem for some of their detergents going overseas is solved by using Sutherland wax-laminated cartons.

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Vets' Dog Food goes to market in a strong colorful multi-wall bag made by Arkell & Smiths. The outer wall is brilliantly printed in three colors on Riegel's supercalendered bleached kraft.



Miracle of the Can:

how it changed the habits of the world

One hundred and fifty years ago, Peter Durand, an English merchant, was granted a patent for vessels of "pottery, tin or other metals of fit materials." Thus, the miracle of the can was born. This early "tin cannister" packaged foods in sealed containers . . . and changed the habits of the world.

Today, not only food but an almost infinite variety of things we use and enjoy comes in metal containers. Beverages, paint, petroleum, chemicals . . . these are just a few of the products brought to us conveniently, economically . . . by the "miracle of the can."

Can manufacturers everywhere, in the U.S. and abroad, are enthusiastically preparing to participate in the Sesquicentennial of the Invention of the Metal Can. You may want *your* company to take advantage of this great opportunity to tie in with this important observance. The Sesquicentennial may be used as a springboard for stories, advertisements and promotions that can serve each organization's special needs.

American Can Company is proud to be a part of this great industry as it observes its 150th anniversary. Canco's continuing program of research and development is pledged to provide still better packaging for the products of agriculture and industry.

American Can Company



cleanser in a glamour-package

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Investigate the complete line of Cleveland Containers. Write for our latest packaging brochure.



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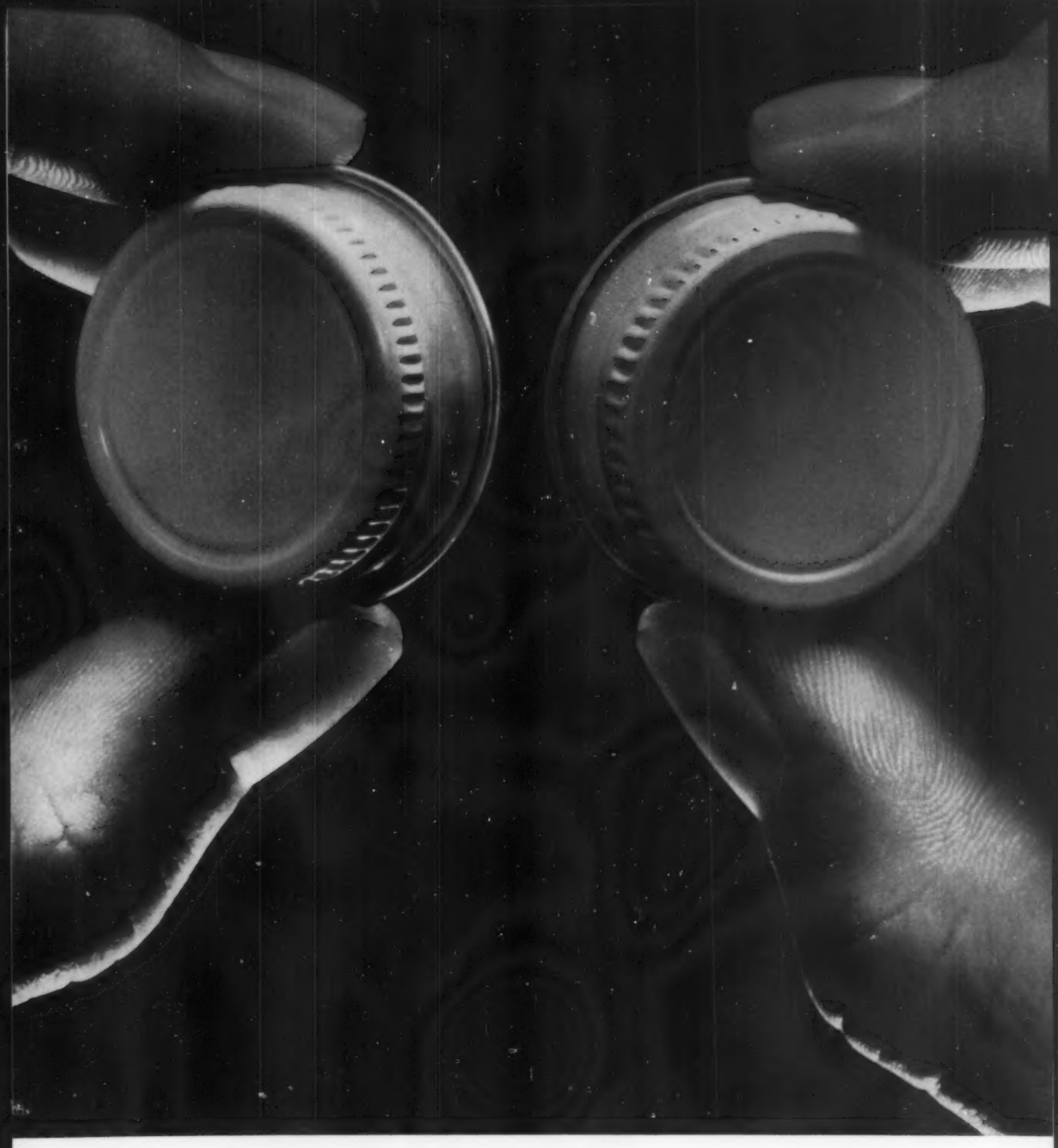
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Which cap is setting filling line records?

The cap on the right is adequate for many uses. The one on the left is a development that's setting a new standard of performance for metal caps.

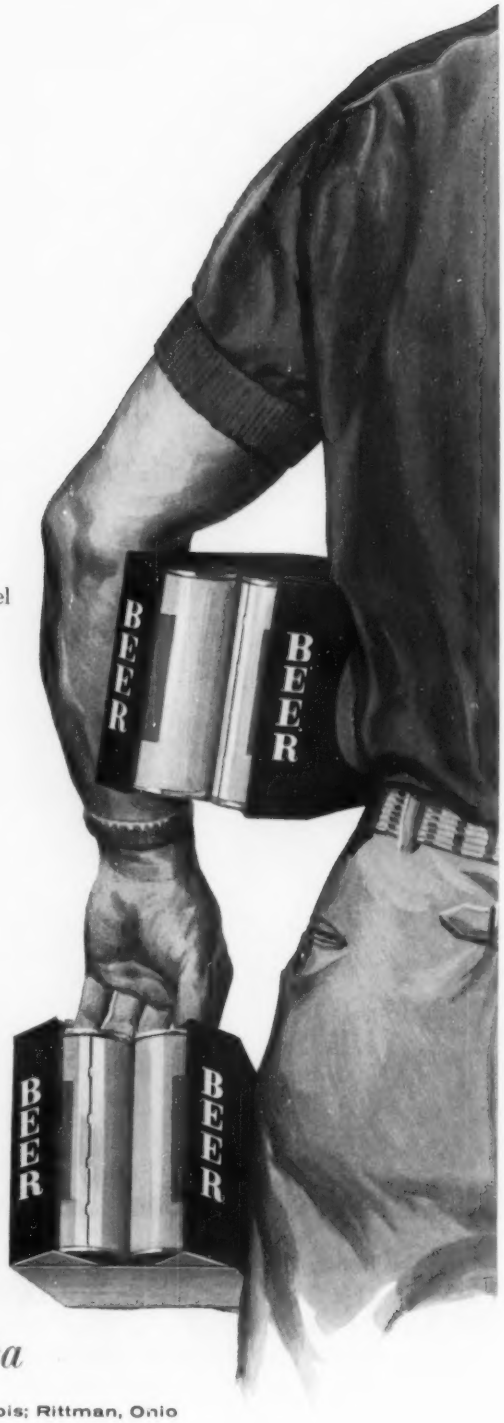
Three years ago, tools to produce such a cap didn't exist. So Armstrong engineers designed and built them. The major improvements in these new caps are documented in a free 20-page brochure.

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CONVERTING: Rolls, Sheets, Bags, Pouches, Envelopes.





A-C® Polyethylene

CARTON COATINGS OFFER 7-WAY PROTECTION

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- Improved scuff resistance
- Higher chemical resistance
- High grease resistance
- Better gloss
- Moisture resistance
- Reduced rub-off

Allied Chemical

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Incorporate A-C Polyethylene into your present carton-coating operation! It will eliminate fiber scratch and scuffing, give your cartons adequate resistance to grease, water and chemicals.

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Write for literature, free samples. Free samples and technical data are now ready for your evaluation. Just write us at the address below. Or ask your local Semet-Solvay representative for a demonstration in your own plant. He can show you, right on your own equipment, how A-C Polyethylene can improve your cartons, save you money at the same time! *Contact us for the names of processors in your area who make up blends of A-C Polyethylene and wax.*

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* Clupak, Inc.'s trademark for stretchable paper.



New plastic packages boost ice cream sales 60%

Six months after a southern ice cream maker switched from half-gallon conventional tubs to plastic packages molded from DYLENE® polystyrene sales of his premium-priced ice cream jumped 60%. The same processor also substituted pint plastic packages for his quality line of sherbets. Within three months he had sold over 80% as many pints in the new plastic packages as sold in conventionally packaged pints for the entire previous year. Customers like the fresh, sparkling appearance of the plastic packages and they appreciate the fact that the package stays attractive and holds its shape until all the contents are used.

The plastic packages are molded from DYLENE polystyrene, a product of Koppers, by the Clearview Container Company of Atlanta, a division of Greyshaw of Georgia. In addition to ice cream they are also used to package potato and gelatin salads and other dairy products retailed through large southern food chains.

DYLENE polystyrene is ideal for packaging a variety of food products. It is inert in the presence of food acids. It will not affect color, taste, or odor. It is strong enough to stand up under quick freezing and general handling on trucks and in supermarkets. Packages molded from DYLENE polystyrene are uniform in size and shape. They move smoothly through automatic filling equipment at efficient production speeds. Because this Koppers plastic is dimensionally stable, lids are consistently uniform and give day-in, day-out capping accuracy.

For more information on DYLENE polystyrene and these other fine plastics—DYLITE® expandable polystyrene, DYLAN® polyethylene or SUPER DYLAN® polyethylene, write to Koppers Company, Inc., Plastics Division, Dept. MPG-102, Pittsburgh 19, Pennsylvania.

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KOPPERS PLASTICS

KOPPERS

TOP AWARD!

The President's Award for the outstanding flexible package of 1959 presented to Equitable by the National Flexible Packaging Association.



THE PACKAGE!

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prevented with a Tickometer





Use basic labels, with blank spaces for mandatory data or specifications. Use a Tickometer—to imprint ingredients, size, color, weight, price or code number on labels as you need them—for the day, lot, pack or special order. When label changes are necessary, change your Tickometer imprint quickly and easily. Avoid the waste of unusable pre-printed labels, cut label inventories and printing costs.

- A Tickometer imprints accurately, with good register, from 400 to 1,000 pieces per minute—labels, wrappers, small cartons. Handles most weights and finishes of paper and light board; in sizes from 1 by 2 to 15 by 15 inches.
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Made by the originator of the postage meter . . . offices in 122 cities in U.S. and Canada.

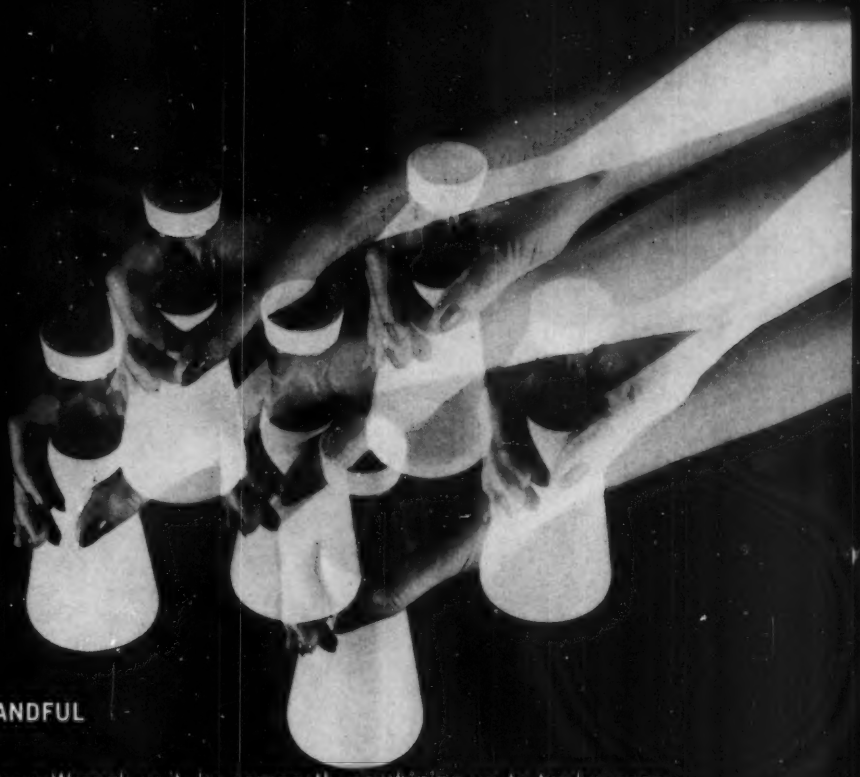
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Container Corporation's new Wrapak unit, by compactly combining up to twelve cans or bottles, dramatically reduces handling costs for the manufacturer, distributor and retailer of drug and cosmetic products.

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CONTAINER CORPORATION OF AMERICA

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BARTELT MACHINES ARE A SOUND INVESTMENT!

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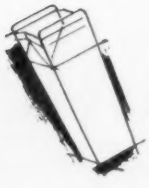
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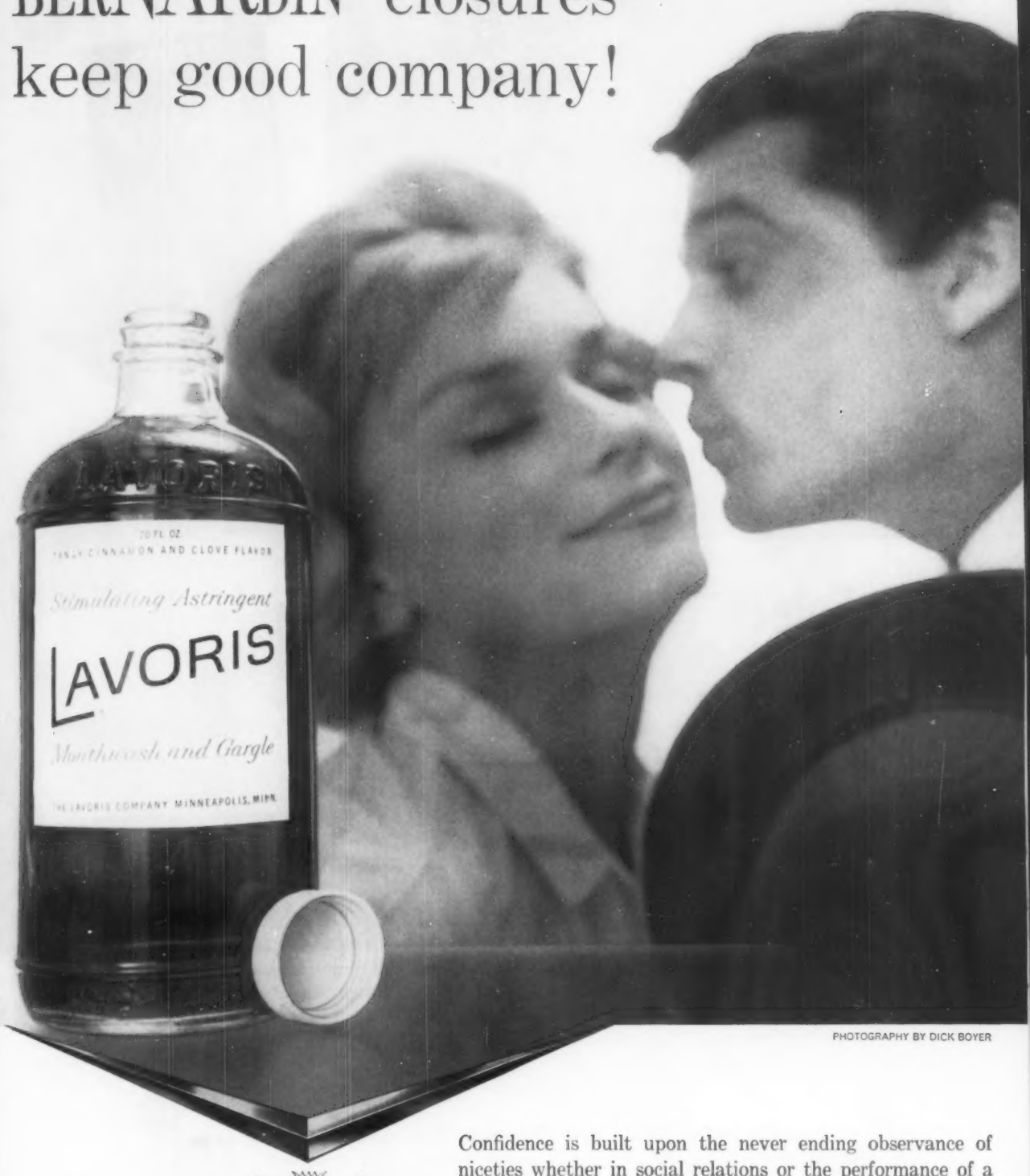


POTLATCH FORESTS INC.
PAPERBOARD DIVISION—GENERAL OFFICES—LEWISTON, IDAHO

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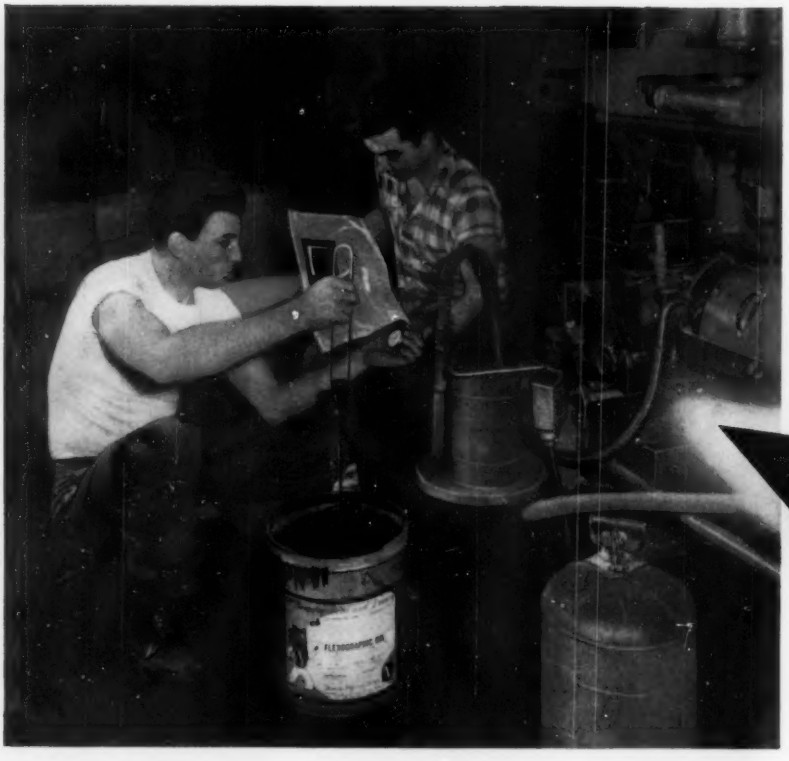
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PHOTOGRAPHY BY DICK BOYER

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Heath's Almond Toffee Chips pack extra counter punch in Aluminum Foil



New foil packaging for Almond Toffee Chips by **L. S. Heath & Sons, Inc.** combines taste protection with a visual hard-sell that wins the fight for attention on crowded candy counters.

Milprint, Inc. of Milwaukee produces these handsome foil overwraps. **Anaconda Aluminum** supplies the foil which reflects quality and good taste while displaying the famous Heath name to advantage before brand-conscious candy buyers.

Heath found unexcelled product protection and extra counter punch in Anaconda Aluminum foil packaging. To give your product these advantages, contact your nearby Anaconda Aluminum representative. And for a new booklet describing all our facilities and products, write Anaconda Aluminum Company, Dept. MF-1, Louisville 1, Kentucky.

When you buy foil for packaging or printing, remember . . . every industry has one member who specializes in customer satisfaction.

ANACONDA ALUMINUM

ANACONDA ALUMINUM COMPANY • GENERAL OFFICES, LOUISVILLE, KENTUCKY



Film for bread wrappers extruded from Tenite Polyethylene by Pollock Paper Company; general offices, Dallas, Texas. Plants and sales offices located coast to coast.

Bread now goes to market the modern way...wrapped in film of **TENITE POLYETHYLENE**

Pollock Paper Company, *division of St. Regis Paper Co., using medium-density Tenite Polyethylene, supplies bread wrappers offering many advantages to both bakers and housewives*

When bread is wrapped in film of Tenite Polyethylene, housewives are getting maximum freshness protection...grocers, a package with super sales appeal...and bakers, two-way economy: reduced wrapping costs, with fewer stale returns.

Film extruded from medium-density Tenite Polyethylene offers an ideal combination of properties: resistance to moisture transmission prolongs freshness; sparkling finish and outstanding clarity add sales appeal; softness of feel emphasizes the bread's freshness. This film also possesses just the right stiffness and slip for efficient use on high-speed packaging machines. Its wide heat tolerance means efficient operations on wrapping machines, and minimizes waste. And, in use, film of Tenite Polyethylene retains its strength even at low temperatures. From wrapping room to kitchen it offers maximum resistance to impact and tearing.

For all these reasons, Pollock Paper Company, the nation's leading supplier of bread wrappers, has selected Tenite Polyethylene as its standard of quality. Extruded on special equipment to assure utmost clarity and sparkle, Pollock's "POLY-SEAL" film is used by bakers from coast to coast.

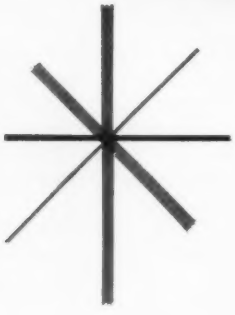
For more information about this film... for guidance in adapting existing wrapping equipment and developing suitable wrapping techniques... write Pollock, or EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.

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NOW THERE ARE 7 THERMOGRIP



Hot melt adhesive applicators

Low cost, compact unit makes instant-set adhesives available to wider range of uses

Clean, fast, no-waste THERMOGRIP adhesives can now be used in an even broader range of applications with the new THERMOGRIP Applicator Model DN. Compact, low cost, and versatile, the Model DN is the seventh and latest addition to the line of THERMOGRIP applicators for melting and applying instant-set THERMOGRIP adhesives.

Waste is eliminated because cord-like THERMOGRIP adhesive is metered in automatically only as used. Just the right amount of adhesive is applied for each job. Nozzles for the Model DN can be varied to provide wide variety of application patterns: round beads, wiped or thinly wiped wide bands, narrow bands or widely spaced individual lines — in widths from 3″ to 1/16″. THERMOGRIP adhesive can be applied upward or downward, or to vertical or angled surfaces.

Easily adapted to a wide range of processing equipment, the Model DN THERMOGRIP Applicator is used for joining a wide variety of paper, foil, and hard to bond treated surfaces. Applications include side seaming and end closing in bag making, applying of plain paper tapes and many products used in automotive, apparel, food processing, and building industries.

The nozzle illustrated on the applicator is especially designed to produce economical moisture-proof, sift-proof, tape-over-stitching closures for multiwall bags. For complete information on THERMOGRIP adhesives and applicators send coupon today.

United

UNITED SHOE MACHINERY CORPORATION
140 Federal St., Boston 7, Massachusetts
Liberty 2-9100



A few of the many nozzle designs available to tailor the Model DN hot adhesive applicator to your job. Other models use wheels to apply desired patterns. Large, medium, and small capacities give you just the capacity you need.

United Shoe Machinery Corporation
140 Federal Street, Boston 7, Massachusetts

Please send me the following material:

- ☐ Complete information on Model DN
- ☐ New folder on tape closures on multiwall bags
- ☐ New general catalog on Thermogrip adhesives and applicators

Name.....Title.....

Company.....

Address.....

City.....Zone.....State.....



STAY-FRESH PACKAGING... with the

Cellophane gives tailored protection that keeps products fresh and flavor-full... and its crystal clarity enhances display appeal, triggers extra sales.

Today's shopper spends only a few seconds selecting an item in the retail store . . . yet she must pick from thousands of items. Surveys show that approximately 70% of supermarket purchases are "store decisions". . . and *sight* of the product is a powerful influence in these decisions. That's why cellophane's pure transparency is so important. It sells the shopper lightning-fast . . . lets her see color, shape, texture . . . lets the product itself do the selling.

What's more, Du Pont cellophane is versatile. It offers virtually unlimited package constructions . . . efficiency on



basic sales power of pure transparency

high-speed machines . . . vivid color printing. There are over 100 varieties, each tailored to meet specific needs.

Du Pont's new "K" cellophanes—result of 35 years of transparent packaging experience at Du Pont—now offer you greater brilliance, protection and durability. Draw on this experience to help obtain a better, faster-selling package.

See your Du Pont Representative or your Authorized Converter of Du Pont cellophane. E. I. du Pont de Nemours & Co. (Inc.), Film Department, Wilmington 98, Delaware.

DU PONT
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DU PONT cellophane



Niemand Bros. "Top Hits" Quartet

makes new records in tubular paper packaging!

More and more, producers are insisting that the package that brings their product to market offer sales appeal, product protection *and* economy. As a result, tubular paper packages by Niemand Bros. are proving their practicality more than ever before. These are tried and proved containers – built to protect your product in transit and on the shelf – designed for the appearance and dispensing convenience that moves your product off the shelf into the buyer's hand.

Our staff of package design consultants is at your service. You can put them to work for you by simply calling your Niemand representative. No obligation, of course.



CUSTOM PACKAGING
– for standout individuality



GOOSENECK CONTAINERS
– for efficient, economical small unit packaging



SIFTER TOPS
– with "eye-and-use" appeal for granular products.

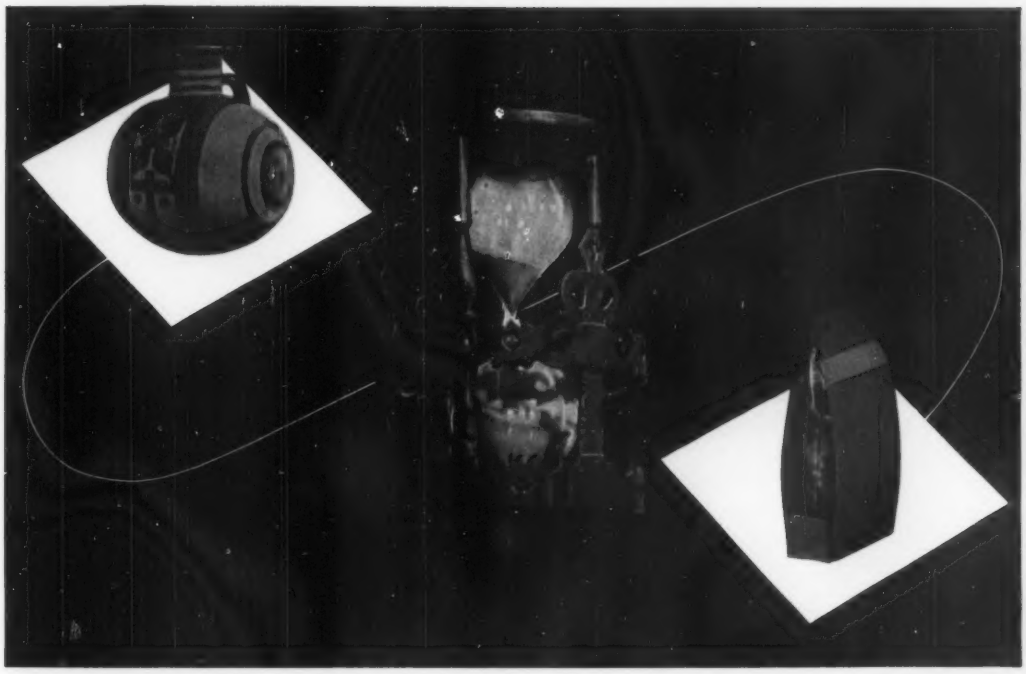


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in transparent film packaging . . . tremendous experience amassed over the years, and continuous research today, enabling us to lead the way in new development — these are the factors that guarantee you the most knowledgeable, most useful opinion on your own particular packaging problem. Do you want advice on the transparent packaging film that will suit your product best? We have scientists and technicians, the foremost in their field, to help you select the appropriate one. They may suggest cellulose film in one of its many types. Perhaps you may need BCL polythene film. Or your product may be an 'awkward' one — something you thought could never be packaged visibly . . . like a liquid, a cream or paste, a powder; acid, alkali, grease, salt; a heavy, sharp article. In this case we should probably recommend polythene-coated cellulose film or one of our new plastic films.

Contact us now for further details and samples of our films. And if you need practical help to use them to best advantage, we are ready and keen to co-operate with you.

BCL

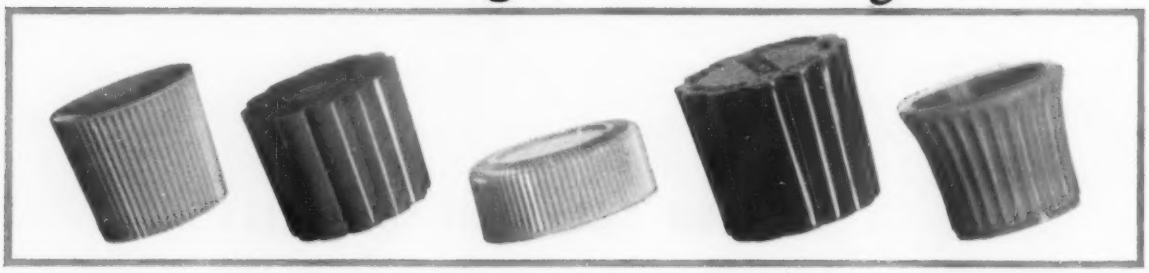
BRITISH CELLOPHANE LIMITED

Henrietta House, 9 Henrietta Place, London, W.1, England

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Selling Beauty?—



Boxes designed by Avon, molded by Garmold, Inc.
Closures molded by Mack Molding Co., Inc.



Impact styrene works design magic

. . . and design magic was translated into sales magic when Avon Products Inc. introduced their "Beauty Dust" bath powder in these eye-catching packages. BAKELITE Brand medium impact styrene TMD-9001 easily lends itself to packaging jobs which end with a success story. Look closely—these packages are all basically the same design. By changing the color of the base, ring, and lid, adding metallic findings, plastic labels or hot stamping in gold, and changing handles, Avon Products has a package for any number of their "Beauty Dust" fragrances.

But that's not the whole story. Prudent and customer-minded manufacturers demand a package with strength and durability . . . made from materials they know will in no way injure their product. TMD-9001 molded packages provide protective strength even in thin walled applications. Some added values . . . high gloss, hard surface and unlimited color possibilities.

For the molder, TMD-9001 ensures a wide molding latitude for injection molded parts. It flows easily in thin sections and long flow parts. It is particularly suited for the complex shapes which tax machine capacity.

Try TMD-9001 for your own product. If you package in bottles, add a touch of appropriate elegance with a closure molded from TMD-9001. Your packaging designer or supplier can tell you about the benefits of this material. Or write Dept. AD-06G, Union Carbide Plastics Company, Division of Union Carbide Corporation, 30 E. 42nd Street, New York 17, N. Y. *In Canada:* Union Carbide Canada Limited, Toronto 7.

UNION CARBIDE

BAKELITE and UNION CARBIDE are registered trade-marks of Union Carbide Corporation.



THE THICK AND THIN OF IT!

At EXTRUDO-FILM's new Plant No. II, "The Thick and Thin of It" means more than just gauge.

It refers to quality standards that won acceptance for EXTRUDO-FILM's polyethylene tubing and sheeting. Leading converters know that "Through Thick and Thin" EXTRUDO-FILM offers:

- *Perfect ink adhesion for high speed printability.*
- *Faultless wind and tension ending weave and curing registration difficulties.*
- *Even gauge and perfectly flat rolls eliminating wrinkles, bellying and pucker.*
- *Good yield to put an end to "missing" profits.*
- *Consistency insuring satisfaction order after order.*

Every pound of EXTRUDO-FILM is as perfect as the pound that preceded it.

With these standards it's easy to see why at EXTRUDO-FILM "The Thick and Thin of It" is another way of saying, "The Best."

EXTRUDO-FILM efc CORPORATION

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POTTSVILLE, PENNSYLVANIA • 100 WEST CHICAGO AVENUE/CHICAGO 10, ILLINOIS

Background for Packaging

The cranberry scare (see *Editorial Memo*, p. 69, this issue) is quickly followed by the Black Jelly Bean Crisis—and there is real meaning here for packagers watching the implications of the Food Additives Amendment. Unlike the cranberry weed killer, which had warning signs posted all over it, the suspected element in black jelly beans is carbon black, which had long been "generally recognized" as a safe food colorant. Pointed omission of carbon black from F&DA's first list of "recognized safe" food additives has thrown the jelly-bean industry into a tailspin. *The lesson:* Long acceptance of any food additive is not in itself a positive assurance under the new law.

Slipping profits of flexible-packaging converters may be a warning of price rises to come. A summary of financial ratios of 40 converters by *Ernst & Ernst* for the year 1958 showed only a 1.7% net after taxes, as compared with 4.1% for all American business firms for the same period. A similar, but not identical, sampling of 35 converters in 1957 showed a 2.2% net after taxes and 4.8% for business as a whole.

Aluminum-can prospects have brightened considerably with last-minute announcement by *Libby, McNeill & Libby* that it intends to switch its entire 1960 pack of 6-oz. frozen citrus products from tinplate. Depending on supply, Libby will use about 100 million aluminum containers this season, boosting by 50% the current estimates of total aluminum-can output for the year and making Libby the largest single user of this container (see "The Can Looks to the Future," p. 92).

The one real answer to foreign competition in the U. S. packaged-goods market, says *R. O. Kristiansen*, buyer for the McCrory-McLellan stores, is to use our greater knowledge of packaging. "Stop merely protecting what you have," Mr. Kristiansen warned a variety-stores-industry meeting. "Make it your purpose to drive ahead with better merchandise, packaged more effectively. Foreign manufacturers find it difficult to package effectively—first because of lack of knowledge and experience and, second, because this increases cubic cost of transportation."

Watch the switch from wasteboard to bleached board to meet requirements of the Food Additives Amendment. The feeling is that wasteboard, unless effectively covered or coated, will never get F&DA approval for food contact, because it is impossible to identify the elements that might migrate. Producers of bleached board, on the other hand, can identify and regulate the ingredients of their products, including chemicals, and expect soon to have them cleared.

How many preliminary ideas are screened before a final package design is selected? For two new *Brown & Williamson* cigarette brands the total was 136. Package designer, *Frank Gianninoto*, submitted 72 suggestions for Belair until a pictorial treatment was chosen and 64 for Life that led to the choice of dominant typography. Many of them were evolutionary combinations of components or minor variations of early ideas.

Biggest markets for packaging are not always where you think. Babies are bigger than face powder—$484 million spent by consumers in 1958 for baby needs, as against $445 million for all [*Continued on page 42*]


Now packaged to
sock competition . . . .
FRUIT OF THE LOOM
BOYS' STRETCH SOCKS
ONE PAIR 49¢
100% NYLON
FITS SIZES 8½-10
FRUIT OF THE LOOM
BOYS' STRETCH SOCKS
ONE PAIR 39¢
100% NYLON
FITS SIZES 8½-10½
FITS ALL SIZES 8½-10½
FRUIT OF THE LOOM
BOYS' STRETCH SOCKS
ONE PAIR 39¢
100% NYLON
FITS SIZES 8½-10½
Sanitized FOR HYGIENIC FRESHNESS
AMERICAN LANDS
ENGLISH IN ACTION

. . . . . with BRITE-PAK ENAMEL COAT

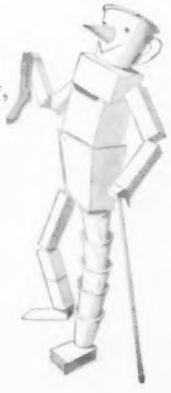
Another famous name has switched to Brite-Pak Enamel Coat bleached board for packaging!

Kayser-Roth Hosiery Co., Inc., world's largest hosiery manufacturer, now presents its "Fruit of the Loom" stretch socks in new, eye-catching packages. Snow-white on both sides and all the way through, these sparkling cartons look more sanitary than old-fashioned containers with their drab interiors next to the product.

Brite-Pak Enamel Coat's smoothly gleaming surface is unsurpassed for brilliant, full color process printing and product illustrations, yet this fine bleached board of 100% virgin pulp is truly economical.

Users say Brite-Pak Enamel Coat is the best machine coated bleached board on the market. It is the perfect answer for colorful, *modern* packages. See how you can use it to *upgrade* your packaging . . . and still save money.

For the whole story, write to Bleached Board Division, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, N. Y.



West Virginia Pulp and Paper

Background for Packaging

[*Continued from page 39*]

cosmetics. Hair products were bigger than either—$633 million. And candy sales hit $2.3 billion, as against $1.6 billion for breakfast food.

Boil-in-bag foods are about to move out of the novelty stage. Close on the heels of a major move by Sara Lee Kitchens of Chicago (vacuum-packed plastic bags) comes word that both *Armour* and *Swift* are quietly testing and gearing up for national distribution of bagged, frozen barbecued and other prepared meat items. Thus begins a new phase of the major meat packers' long effort to carry their brand names direct to the consumer, via packaging, on fresh and frozen meats.

Keep an eye on a major new move to package and preserve frozen meats with a plastic coating. One of the first two petitions to F&DA for clearance of packaging materials under the new law covers a *Dow* formulation of a thermoplastic material which, according to trade reports, is intended as a transparent, hot-melt coating for meat cuts, used with special machinery for economical application. In a recent talk to the National Assn. of Hotel & Restaurant Meat Purveyors, *William Westveer* of Dow described the material and process without identifying it.

Silver lining among the problems of the Food Additives Amendment: Under previous law, some packaging ingredients were barred because they did migrate and hence had to be classed arbitrarily as "adulterants." Now, the law provides a means to prove, in many cases, that even though an ingredient does migrate, it is not harmful and therefore is acceptable.

There's a new twist to tie-in merchandising of packaged products: Supermarkets are displaying certain non-foods next to closely related food products, says *Progressive Grocer*. For instance, baby powders, lotions, shampoos and other items are placed alongside canned and strained foods. You can expect more of this with food-packer Gerber's stepped-up introduction of baby pants to food retailers.

Thought for 1960: "Food packages too often are victims of trends. One wide-faced package breeds a host of other wide packages, and one red and yellow package is soon followed by other red and yellow packages. No one wins when all designs look alike and the customer is merely confused. If a package is designed to fit the true character of the product it covers and the company it represents, then it must have distinctive characteristics. Effective design originality in a package will invariably make its greatest showing on the sales reports, while copies will always remain second in design and sales."—*Alan Berni*, package designer.

Inadequate labeling of food products is more annoying than any other food-industry practice. So says *Food Field Reporter* in summarizing comments by 43 newspaper and magazine food editors. Most criticized label practices are obscure listing of product weight, small-size type for important information on cooking time or preparation, vague estimates of cooking time and too much space devoted to advertising claims. Wanted on labels are complete menus and recipes to help homemakers plan nutritious, appetizing meals. The editors lauded convenience foods, reported housewives like to add their own touch to such products, but complained that too often new foods are not available at retail in their areas at the time manufacturers announce their introduction.

Are you tooled up and ready to win your share of the 40% greater market for personal goods and services Americans will create by 1970? That's *Fortune* Magazine's estimate of the trend in the '60s for food, clothing, alcoholic beverages, tobacco products and miscellaneous goods and services ranging from cosmetics to watches. Total now: $125 billion. Total market to be reached by 1970: $175 billion.



This M & Q Nylon Film containing a number of unrelated items in heat-sealed compartments demonstrates why this particular film material made of high tensile strength Plaskon* Nylon may be your answer for the packaging of difficult products. Its advantages: 1. Low permeability—containment of odors as strong as a sliced onion. 2. High resistance to grease and vapors—as in crank case grease and moth flakes. 3. Excellent heat resistance—whole bag can be steam-sterilized. 4. Good printability—the advantage of print on the film itself.

To obtain a sample of M & Q Nylon Film with products sealed in for your own close examination, write or call:

M&Q PLASTIC PRODUCTS

FREEHOLD, NEW JERSEY, FReehold 8-6663

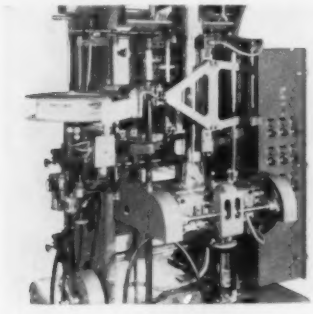
*Trade Mark of Allied Chemical Corp.

Equipment & Materials

Automatic header-label attachment

Hayssen has introduced a new header-label attachment for its "Compak" line of automatic packaging machines. The labeler attachment automatically feeds and indexes the label from roll stock and attaches it to the formed film as it pauses on the filling tube. The attached label is pulled down the tube as the film is advanced through the machine to the final sealing stage. The sealing jaws heat seal the label in the same operation which seals the pouch. Shown in the smaller photo (at the right) is a film bag of peanuts with the printed paper label attached. The photo below shows the machine with its labeler attachment. The roll of label stock can be seen at the left in the picture. One major advantage of the new labeler attachment, according to the supplier, is labor savings. It reportedly will free two operators from the time - consuming job of handling and feeding pouches. Another advantage cited for the unit is that labels are cut from roll stock as it is attached to the film, thus eliminating label curling and the possibility of double feeding. The labeler is designed to work at the exact speed of the machine to which it is attached. Changing label rolls is said to be a quick and simple operation. *Hayssen Mfg. Co., Sheboygan, Wis.*





Polyethylene handled at high speed

AMF reports that its new high-speed bread- and roll-wrapping machines will handle all types of wrapping materials (including polyethylene) used by the baking industry. The bread wrapper is claimed to operate at a speed of 75 loaves per minute; the roll wrapper at 50 per minute. Achievement of these speeds in the handling of polyethylene is reported to be the result of the development of heated sealing bars which travel along with the product so that the finished package is given a full seal. In the sealing process, the width of overlap is reduced 50%, which makes possible a 6 to 8% saving in wrapping material, the company says. *American Machine & Foundry Co., Bakery Machinery Div., 261 Madison Ave., New York 16.*

Strong new folding box

A folding box that reportedly can withstand direct pressure of 340 lbs. without crushing has been put on the market by Mead Packaging's Atlanta Paper Div. The Stack-Pak, as it is called, is of one-piece construction. It achieves its unusual strength, the supplier points out, via a special, flip-type double-wall post in the four corners of the bottom. Once fully opened, the box automatically locks in that position. It is designed especially for use in the packaging of clothing and similar products that require a crushproof package. According to the supplier, the container's greatest advantage is that it can bear a greater weight (such as is often encountered in stacking) without collapsing. Little or no interior protective packaging is required, the company says. Made of kraft board, the new box is available in depths ranging from 2½ to 5½ in. *Mead Packaging, Inc., Atlanta Paper Co. Div., Atlanta 2.*

New line of rotary fillers

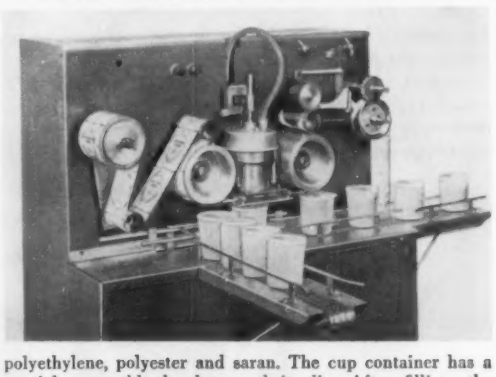
Karl Kiefer Machine reports that it has developed a new No. 5 series of rotary vacuum and rotary pressure-vacuum filling machines. Units in this series are available with 24, 36 or 48 filling stems, each capable of filling less than an ounce to 10 quarts of liquid, semi-liquid or paste products. "Bottom-up" filling action is available, for filling foamy liquids without creating foam in the operation. Also available is an attachment for adjusting fill level while the machine is in motion. Among the new features reported for the new filling-machine series are: gradual acceleration in starting and rapid deceleration in stopping; automatic liquid-flow control, to assure optimum supply for any selected filling speed; a device for elevating and lowering filling heads, for fast, predetermined container-height change, and various safety features which prevent damage to filling stems or glass containers. *The Karl Kiefer Machine Co., 924 Martin St., Cincinnati 2.*

Polyethylene resin for overwrapping

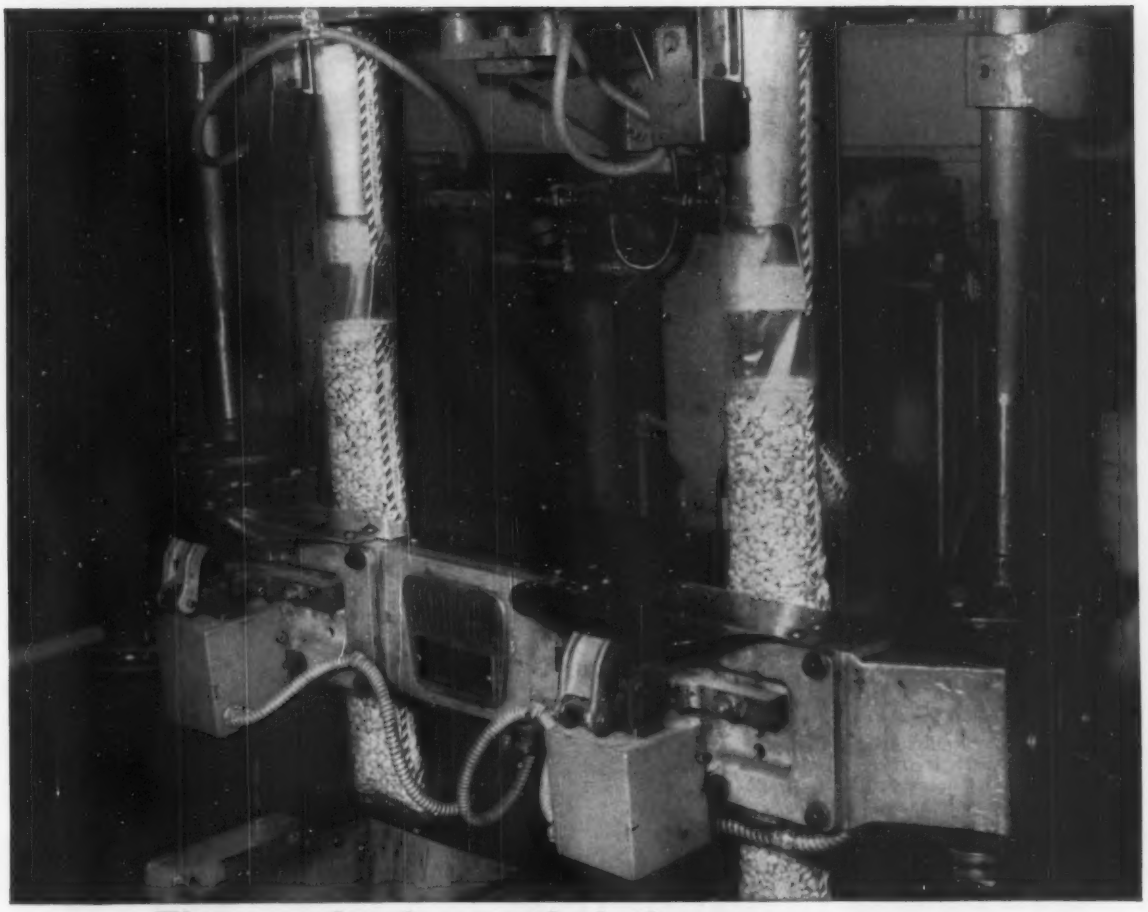
Poly-Eth 2905 is the name given by Spencer Chemical to a medium-density polyethylene resin it has developed specifically for conversion into heat-sealable overwrapping film. The resin has a density of 0.940. According to the supplier, it can be extruded into film of adequate stiffness for a wide range of overwrapping applications. In combination with greater stiffness, the film also is said to possess satisfactory heat-sealing qualities. The resin can be chill-roll cast at speeds up to 250 ft. per minute, the company says. Its density as chill-roll cast film is reported to be over 0.930. Other factors cited for the resin by its supplier are low cost and high yield. Additional information on the material is available from *Spencer Chemical Co., Dwight Bldg., Kansas City 5, Mo.*

Hermetically sealed plastic cup packages

Hermetically sealed plastic containers and machinery for sealing them are available from Plastomatic. The containers —called Seal-Tainers—are made in pint and half-pint sizes from transparent polyethylene. The lids are a lamination of



polyethylene, polyester and saran. The cup container has a special removable bead around its lip. After filling, the pre-printed film lid is heat sealed to the bead. To open the container, the consumer folds the tab upward, breaking the



Those who know their beans Automatically package in VISQUEEN film

TRADE MARK

"We proved VISQUEEN film is best for automatic packaging machines here at the Peak Bean Corporation. VISQUEEN film gives us greater stiffness . . . more body than we find in any other film.

"We get other advantages with VISQUEEN film. Less down-time—by far. Higher speeds. Uniform feeding through the machines. Film is delivered uniformly wound. It all adds up to greater economy when we package dried beans for grocery distribution.

"We find VISQUEEN film's greater uniformity of thickness results in greater film strength, too. No thin, weak spots. We get better machine performance—and better product handling and shipping because of this extra strength, too.

"In the store, VISQUEEN film's superior clarity and printability helps move more product. We give a lot of credit to Trans-Pak of Miami for design and printing."

F. Regis Daily
President and General Manager
Peak Bean Corporation
Greely, Colorado

Write now—or use the information request tag below for details.

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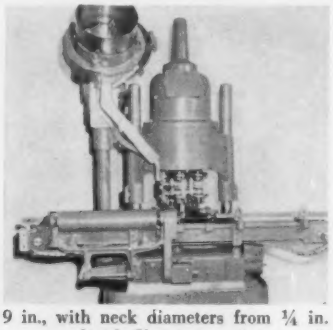
PLASTICS DIVISION
6733 W. 65th St., Chicago 38, Illinois, Dept. H-1
In Canada: VISKING COMPANY DIVISION OF UNION CARBIDE CANADA LIMITED, Lindsay, Ontario.

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bond between the cup and the bead. The closure then can be easily removed and replaced for storage of unused portions. The new containers are suggested for use in the packaging of dairy products, frozen foods and other items. *Plastomatic Corp., Malvern, Pa.*

Machine applies aluminum closures

Alcoa has introduced a new machine for applying aluminum closures of 11 mm. to 22 mm. in diameter. The Type RK machine reportedly will apply caps at speeds of up to 250 bottles per minute, depending on type of product and shape of container. Its five sealing heads are interchangeable, for various methods of cap application. Bottles ranging in height from 2¼ to 9 in., with neck diameters from ¼ in. to 2¾ in., can be accommodated. Change-over from one bottle size to another is said to be a quick operation. Designed for easy maintenance, the machine can be used with a floor-stand hopper for fully automatic operation, the supplier points out. *Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19.*

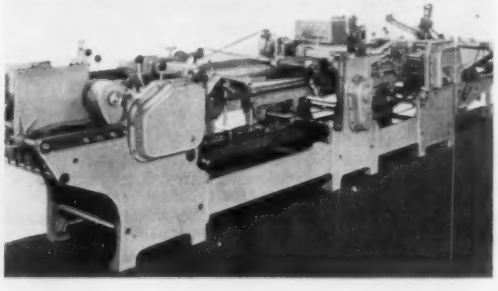


Plastic-box-blank licensees

Nine carton-manufacturing plants have been licensed to produce and supply polystyrene blanks for R. A. Jones & Co.'s new Plasti-Lok machine. The machine cold-folds and locks unscored, die-cut plastic blanks into trays at speeds of 40 to 100 per minute, without the use of heat or adhesives. (See MODERN PACKAGING, Dec., 1959, p. 56.) The licensees are: Robertson Paper Box, Montville, Conn.; Schmidt Lithograph Co., San Francisco; Sample-Durick Co., Chicopee, Mass.; and the Boxboard and Folding Carton Div. of Weyerhaeuser Co., Chicago. The Div. includes these plants: Ace Carton Co., Chicago, La Puente (Calif.) and Middlebury (Ind.); Rochester Folding Box Co., Rochester, N.Y.; Weyerhaeuser Southern, Old Dominion Div., Charlotte, N.C., and Gereke-Allen Carton Co., St. Louis. The company handling licensing is *Charles E. Palmer & Associates, Somers, Conn.*

Straight-line gluer and carton cleaner

Two new items of packaging machinery are being offered by Staude. The first is the Thermo-Seal Prefolder Gluer (shown), designed for applying thermosetting adhesives to such materials as polyethylene-coated board. Gluing speeds up to 1,200 ft. per minute are reported for the new unit. It requires less floor space than conventional units of the same type, says the company. The second new machine is a carton-blank cleaning and counting unit. Operating at normal straight-line gluing speeds, it rids die-cut carton blanks of lint and dust. Cleaning heads employ multiple brushing and vacuum attachments. The machine will handle box blanks ranging in size from 6 by 6 in. to 30 by 30 in. *E. G. Staude Mfg. Co., sub. Ex-Cell-O Corp., 1200 Oakman Blvd., Detroit 32.*



Detection of aerosol leaks

Designed for in-line operation at high production rates are General Vacuum's new Series 800 leak-detection systems. They are used in the production testing of aerosol containers and similar vacuum, pressurized and hermetically sealed products. The systems are available in fully automatic or semi-automatic models. They incorporate a standard mass spectrometer type leak detector sensitive to helium gas, which can also probe rejected items to determine the exact location of the leak. According to the supplier, operation is dry, clean and fast. *General Vacuum Corp. 400 Border St., East Boston 28.*

Flattener for multiwall bags

Rapids-Standard's new conveyor-type bag flattener is designed to facilitate the handling of multiwall bags filled with granular or powdered materials. The Rapistan flattener is claimed to overcome the problems of distortion and enlargement caused by air carried within the bulk material. The unit consists of upper and lower belt-conveyor sections. The shorter upper section is adjustable to the desired height for compressing the filled bags. In operation, a kneading action is initiated, which not only flattens the bag by squeezing out air, but also distributes the material in the bag evenly. Even distribution makes the bag easier to handle on conveyor equipment and easier to stack and to palletize, the supplier says. *The Rapids-Standard Co., Grand Rapids 2, Mich.*

Tamperproof aerosol cap

Now available from Aerated Container is a tamperproof cover for tilt-valve type aerosol containers. Called Tear-N-Scru, the cover completely seals the container and must be torn open before the package can be put into use. An obvious advantage of this type of closure is that it prevents "trial" or other discharge of the aerosol product by anyone but the actual purchaser. After the tab has been removed, the upper portion of the closure becomes a tight, screw-on cap. The cover is made of an inert material and will not react to any aerosol product. The supplier also points out that there is no contact between the end of the valve nozzle and the cap, to prevent accidental discharge during shipping or other handling. The cover is offered in a variety of colors. *Aerated Container Corp., 39 S. LaSalle St., Chicago 3.*



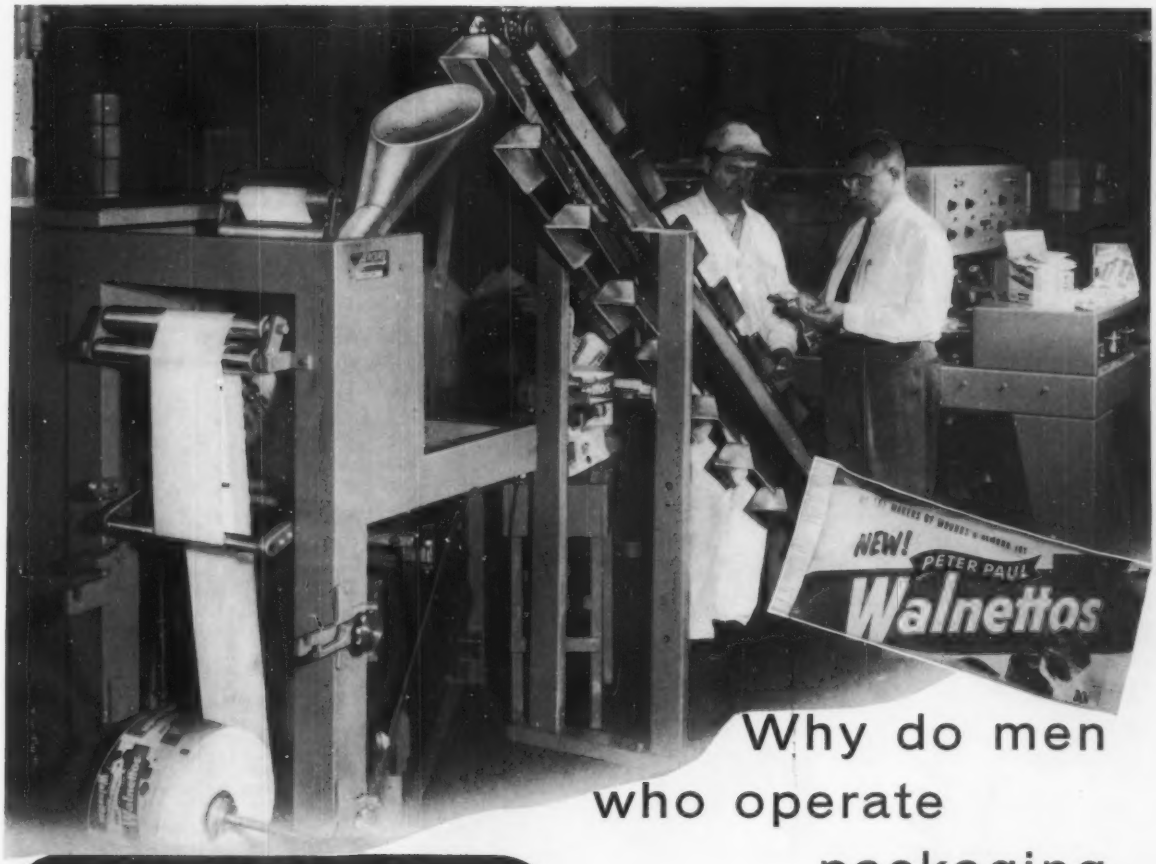
Engraved applicator rolls

M&S Roll Engraving says that its new Microflow engraved applicator rolls are particularly effective in controlled application of color, ink, plastic and adhesives. They are available in three basic cell constructions, in various patterns and cell depths to meet individual requirements. The basic cell constructions are: pyramid cell, for flexographic printing; ruling-mill cell, for heavy application, and quadrangular, for gravure type application. *M&S Roll Engraving Co., Div. Atlantic Engraving, West Warwick, R.I.*

Polyethylene-coated tape closes sewn bags

In-plant closure of sewn bags with polyethylene-coated tape is made possible by its new Crown Thermo-Tape Machine, reports Crown Zellerbach. The automatic machine heat seals polyethylene-coated kraft tape over the sewn tops of open-mouth multiwall bags. According to the supplier, the tape provides outstanding water-vapor protection and it gives a permanent seal against leakage through needle

[*Continued on page 138*]



Why do men who operate packaging machinery choose

VERTI-PAK

Mercury Automatic Packaging Machine

Exclusive VERTI-PAK Features:

- Forms, weighs, fills, seals up to 45 packages per minute.
- Fully automatic operation.
- Easily adjustable for variable bag sizes and materials.
- Reduces labor costs.
- Compact, Space-saving.
- Economical — Pays for itself in savings.

MR. WILLIAM SIEBER

Plant Mgr. of Peter Paul, Inc. says:

"Based on our observations of all makes of packaging machines at the Packaging Shows, MERCURY plainly appeared to be the best for us. The happy fact is that it was a fine choice. We're completely satisfied!"

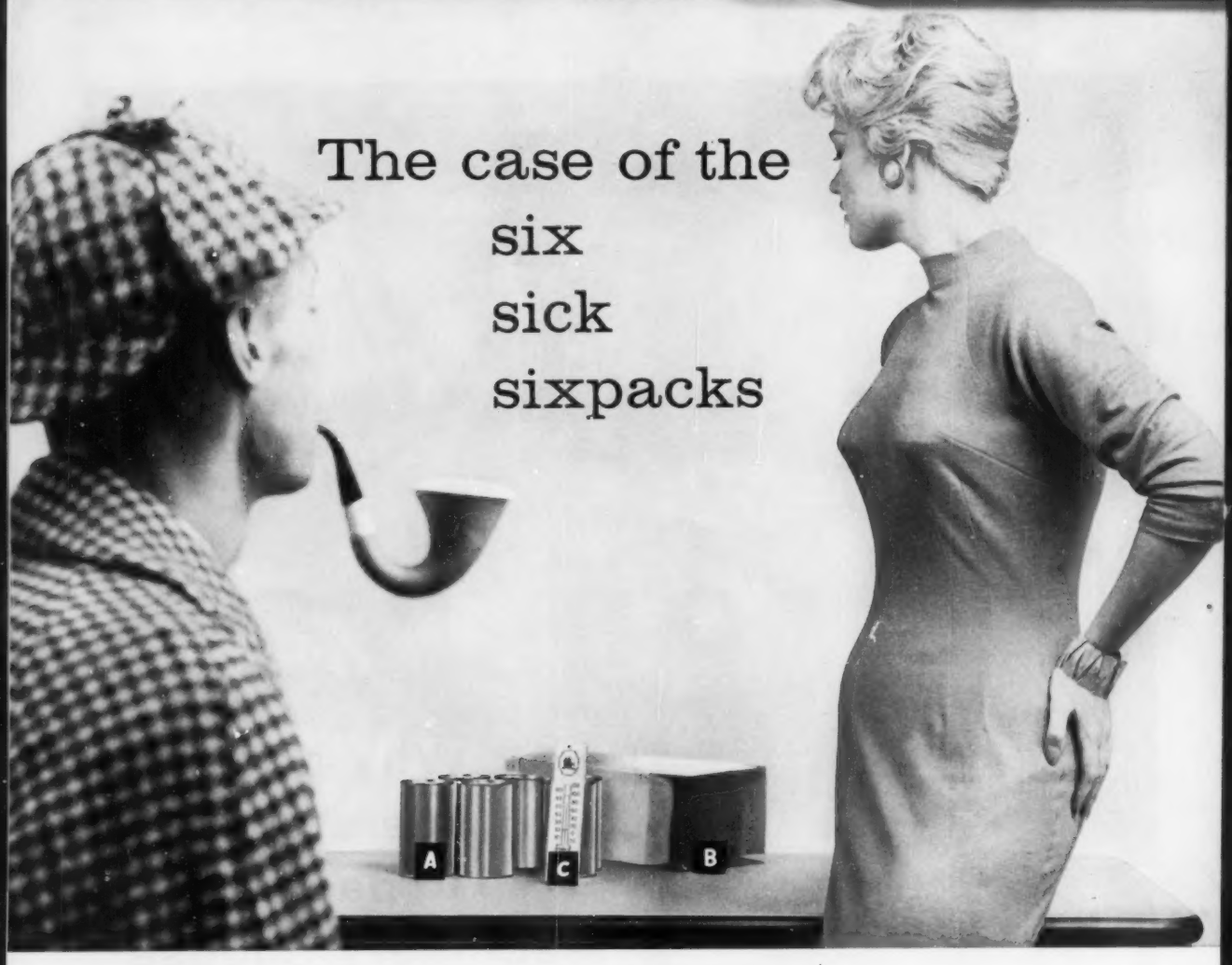
and Mr. Stanley ("Lucky") Korzuch, Foreman of the Peter Paul, Inc. *Packaging Dept. heartily emphasizes that*

"Mr. Sieber moved in the right direction by selecting a MERCURY machine. After seeing the other machines in operation at the Shows, I say MERCURY tops them all by far. In my estimation the others looked too big and complicated. MERCURY machines are simple and compact. Our mechanics find our machine easy to work on, get around and adjust."

MERCURY Heat Sealing Equipment Co.
2601 N. HOWARD ST. Philadelphia 33, Penna.

M-2601

The case of the six sick sixpacks



FEARLESS FULLER: Miss Watson, do you know what a perfect 36 is?

MISS WATSON: Oh, Fearless, you've been peeking at my sweater size.

FEARLESS FULLER: Come now, Miss Watson, let's keep our minds on business. When I say perfect 36 I mean six sixpacks of beer.

MISS WATSON: Hmmmmmmmm.

FEARLESS FULLER: My most recent case involved an imperfect 36.

MISS WATSON: An imperfect 36?

FEARLESS FULLER: Yes, note the cans of beer on the table, and the tattered six-pack cartons that once held them.

MISS WATSON: Someone must have been awful thirsty, to tear those cartons apart like that just to get a beer.

FEARLESS FULLER: Not at all, Miss Watson. The fact is that the adhesive sealing the six-pack bottoms was not Fuller's and gave way and spilled the beer cans on to the floor.

MISS WATSON: Was that because the cans contained what some people call a heavy beer?

FEARLESS FULLER: Please, Miss Watson. Let me call your attention to the thermometer. Exhibit C.

MISS WATSON: What's that got to do with it?

FEARLESS FULLER: Well, as you know, beer is subject to varying temperature and humidity conditions. From warehouse to truck to shelf to cooler and maybe back to shelf again.

MISS WATSON: And?

FEARLESS FULLER: These changing humidity and temperature conditions weakened the adhesive bond, causing the cartons to break, spilling the cans of beer.

MISS WATSON: What was the right solution to the Six Sick Sixpacks case, Fearless?

FEARLESS FULLER: I recommended switching to Fuller's Adhesive #504. Now the case, or should I say cases, are permanently closed.

MISS WATSON: You're amazing, Fearless.

FEARLESS FULLER: Elementary, my dear Miss Watson. A Fuller man always knows the correct solution for adhesive problems.

Your Fuller man is ready with the correct solutions on any adhesive problems for you, too. Contact your nearby plant.

H.B. Fuller Co.

255 Eagle Street, St. Paul 2, Minn.

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THE LATEST WORD IN TUBES!

MARLEX*



From its functionally contoured applicator tip to its automatically heat-sealed base, this tube is made of just one material—MARLEX linear polyethylene! No liners... no coatings... no metal closures . . . only 100% pure MARLEX!



Outboard enthusiasts can now buy this superior gear oil packaged in this convenient applicator tube made of MARLEX.

These new tubes made from MARLEX have many advantages. Thin walls give economy, light weight and flexibility of design...superior toughness, gloss and resilience... and excellent shelf life for food, drug and chemical applications!

MARLEX prints beautifully after standard surface preparation. It can be given any color by blending in pigments. These tubes make attractive, eye-catching containers for pastes and liquids. They're ideal for packaging new products . . . giving new sales impact to older products.

Tubes are made of MARLEX by Plax Corporation, Hartford, Connecticut. They can be filled and sealed with standard tube-filling equipment.

MARLEX packaging has outstanding resistance to attack and permeation by moisture vapor, gases, chemicals and oils. These tubes can even be steam-sterilized prior to filling, since MARLEX'S temperature range is —100° to 250° F!

*MARLEX is a trademark for Phillips family of olefin polymers.

PHILLIPS CHEMICAL COMPANY, Bartlesville, Oklahoma

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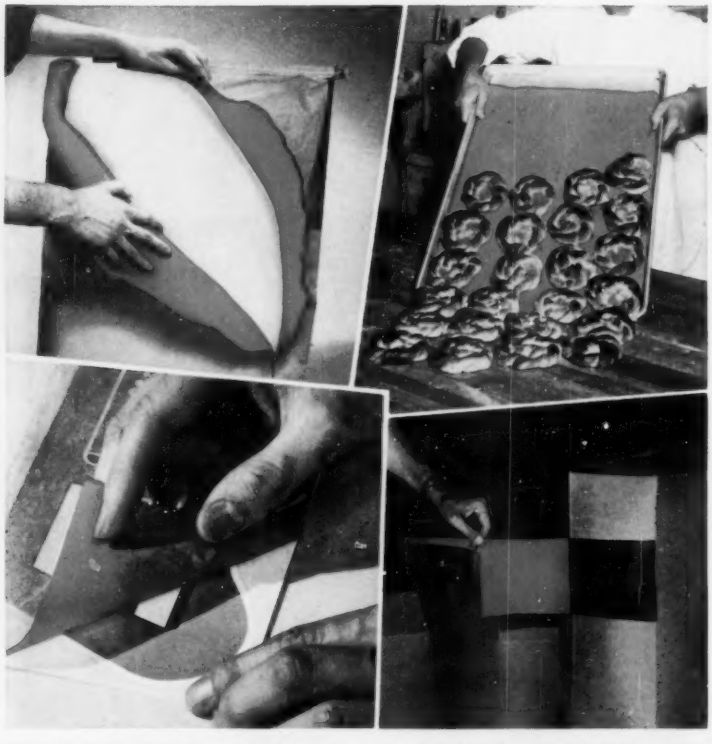
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SILICONE NEWS from Dow Corning

Stuck With High Costs?





On Consumer Products . . . Syl-off coated papers mean more satisfied customers. As backing for self-adhering wallpaper, decorative trim, labels, or other pressure sensitive items, Syl-off coated papers peel free with ease . . . prevent tearing the item when the backing is removed . . . and have no effect on the pressure-sensitive characteristics. As wrapping or interleaving for foods, or as pan liners for sticky candies and baked sweet goods, Syl-off coated papers leave no bits of wrapper clinging.



Products Pop Free from Paper Coated with SYL-OFF . . . New Processing, Packaging Aid Saves Money

If you make, handle, ship or receive sticky products, you'd be wise to look into the use of package liners, wraps, interleaving or backing papers coated with Syl-off* Dow Corning *silicone* coatings. They give amazing release!

Consider the higher production efficiency, lower maintenance costs and extra sales advantages that accrue. Eliminate sticking problems, and you speed up processing and handling operations . . . cut product waste right to the bone. Syl-off is comparable to conventional nonadhesive coatings in cost . . . but its lighter weight cuts shipping costs for coated paper.

Syl-off coated papers have been tested with more than 100 adhesive materials — tough stickers like asphalt, food products, glue, adhesives, unvulcanized rubber — and have been found to release quickly, cleanly time after time. Important, too, is the fact that Syl-off coatings don't in any way alter or contaminate products — and they last as long as the paper.

There are other important features besides controlled stick-proofness. For example, Syl-off coated papers have a natural non-oily lubricity. Water repellency is still another silicone feature imparted by Syl-off. Syl-off silicone coatings are also readily applied to foil or plastic film — impart the same desirable characteristics as they do to kraft, glassine, parchment and paperboard.

Best way to find out what type Syl-off coated paper can help you most is to get in touch with the fine houses that offer papers or containers with Syl-off coatings. Write to Dow Corning for the complete list of Approved Sources plus an informational brochure describing Syl-off paper coatings. Do it today. Address Dept. 7301.

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Your nearest Dow Corning office is the number one source for information and technical service on silicones.

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There's a new twist to Gruen watch boxes



A gentle twist of the top, and this tightly closed package opens to reveal the "Royal Gems" — a sparkling new GRUEN watch.

Appropriately, the Royal Gems are housed in plastic fit for a king . . . DYLENE® polystyrene. DYLENE is especially suited to applications like this, where plastics are called upon to perform; to turn, to hinge, to pivot, to fit precisely, piece after molded piece. Smooth operation calls for excellent dimensional stability. DYLENE has it.

You can do a lot with DYLENE. It is crystal-clear or colorful, has a hard, glossy finish, and is heat resistant.

For complete information on DYLENE polystyrene, write to Koppers Company, Inc., Plastics Division, Dept. MPG-10, Pittsburgh 19, Penna.

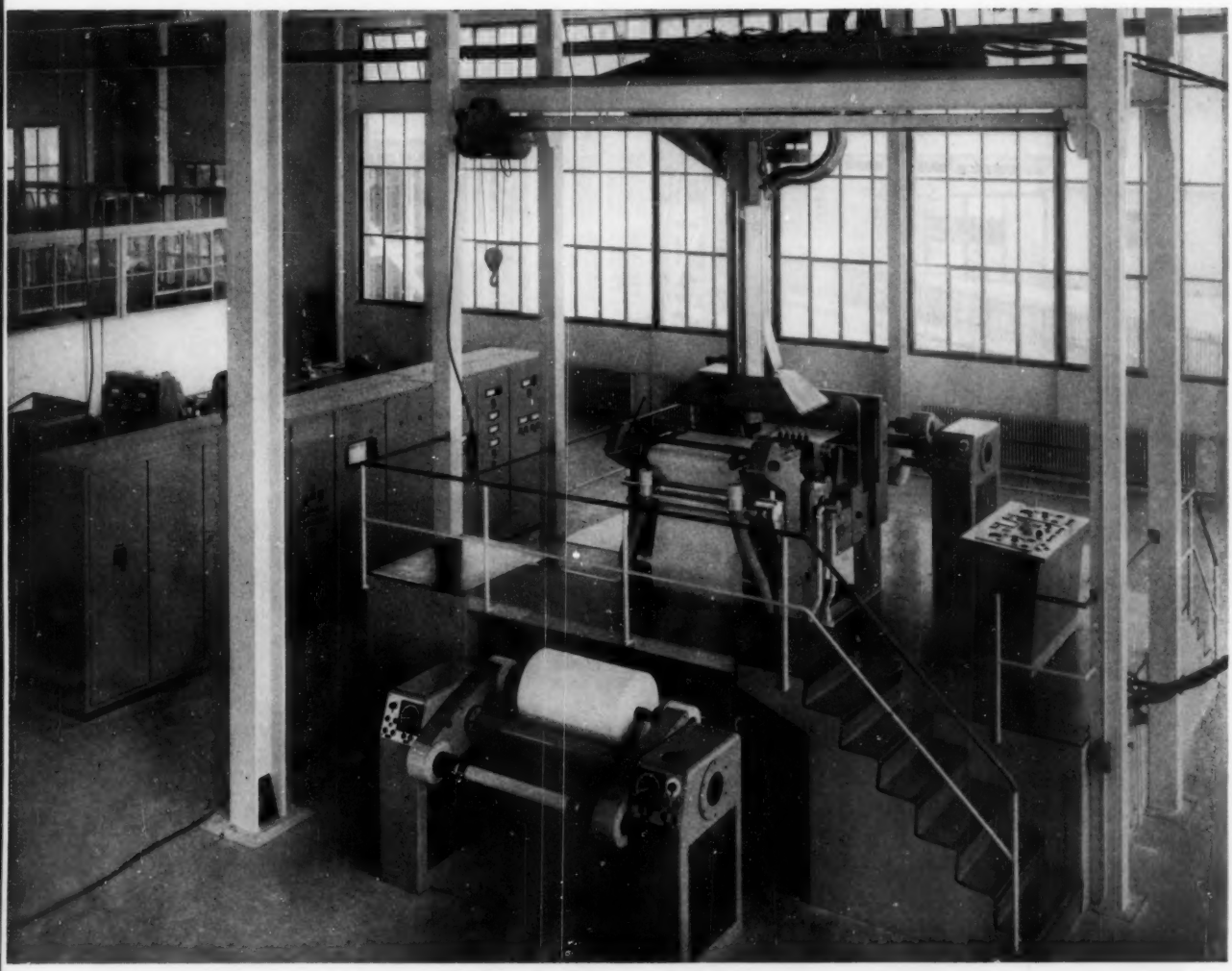
The GRUEN box was designed and manufactured by Custom Manufacturing Company, Jersey City, N. J. Colors: white and gold

Offices in Principal Cities · In Canada: Dominion Anilines and Chemicals Ltd., Toronto, Ontario

KOPPERS PLASTICS

DYLITE® expandable polystyrene, SUPER DYLAN® and DYLAN® polyethylenes are other fine plastics produced by Koppers Company, Inc.

KOPPERS



Oerlikon Extrusion Coating Plant

A revolutionary new-construction designed to coat paper, aluminum- and cellophane-foils as well as textiles with thermo-plastics. Width between 40 and 100 cm (approx. 10" - 40")

MODEL PL 100

Suppliers of complete equipment, consisting of: vertical extruder with wide-slot nozzle; winding up / winding off machine; roller-stand with differential measuring equipment; control cabinets / switch panel (electronic control)

Oerlikon Plastics LTD. STANS/NW Switzerland

Package Laboratory News



Package Laboratory News

Hinde & Dauch Division of West Virginia Pulp and Paper Company, Sandusky, Ohio.

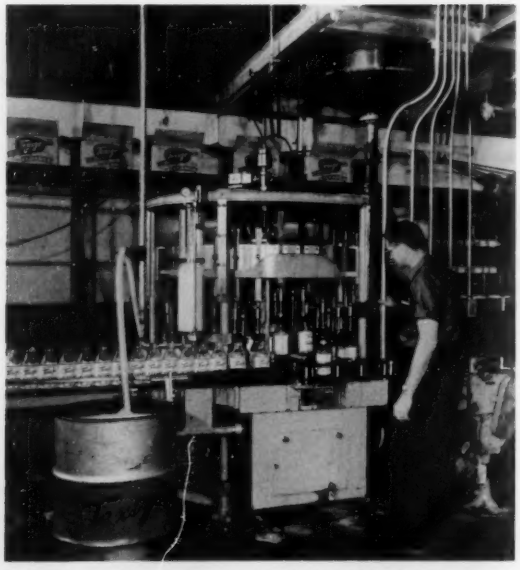
Corrugated Box Plants in: Baltimore • Buffalo • Chicago Cleveland • Detroit • Eaton, Ohio • Gastonia, N. C. • Gloucester City, N. J. • Hoboken, N. J. • Kansas City, Kans. Meriden, Conn. • Phoenix, Ariz. Richmond, Va. • Sandusky, Ohio • St. Louis • Torrance, Calif. • Watertown, Mass.





(Above) H & D corrugated boxes containing unfilled bottles for Texize Cleaner are palletized and stacked at beginning of packaging line for efficient handling. (Below) Employees empty bottles onto a conveyor, then place corrugated shipping boxes on another belt.

Cleaner in four colors



As boxes go above on conveyor, bottles pass through an automatic machine which fills them with Texize Cleaner.

Texize Chemicals, Inc. uses the newest, most effective merchandising devices in promoting volume sales for the leading all-purpose detergent, in the Southeast and Southwest, Texize Household Cleaner, and a family of other fast-selling products.

Recently, for example, the Greenville, South Carolina firm (which also has a plant in Palestine, Texas) called on Hinde & Dauch for assistance in the packaging phase of a new "10¢ off" promotion. Realizing that many retailers used corrugated shipping boxes as part of aisle displays, Texize wanted a new four-color box that would add visual impact to these mass displays – help turn over more Texize.

H & D created a new box design in four colors, matched to Texize's bottle labels for easy stockroom identification. The new boxes were produced on one of H & D's modern four-color printer-slotters – equipment designed to turn out quality corrugated containers in large volume.

The photos on these pages demonstrate another advantage of Texize's new H & D boxes: maximum efficiency in packing, sealing, handling with automatic equipment.



H & D boxes meet Texize Cleaner at this machine, which loads bottles into the corrugated containers and then automatically seals them for shipment.

Filled boxes of Texize go back onto pallets, then move to loading dock for shipment all over the South.





No sooner seen than sold!

Passers buy when the product's effectively merchandised in an H & D corrugated display stand. Give your brand a seat on the aisle in one of these silent salesmen. Better see H & D.

Hinde & Dauch Division

West Virginia Pulp and Paper

Printed in U. S. A. on Sterling Offset Enamel manufactured by West Virginia Pulp and Paper Company, 25x38-80

Sounding board

WE ASK THE READERS

What do you think of pre-pricing by packagers? — Part 2



Edward Robert Brooks
Advertising & Public Relations Director
Peter Hand Brewery Co.
Chicago

Our problems, as far as pre-pricing is concerned, are perhaps best summed up in the company's description as a "regional brewer."

As you know, the alcoholic-beverage industry is probably the most regulated business in the United States. Not only are we faced with a tremendous multitude of Federal laws and agencies governing the manufacture and distribution of our products, but each state and most communities within these states have a wide variety of laws, commissions, codes, etc., which affect our methods of doing business.

Because our basic distribution area is in six Midwestern states, we are most concerned with the laws governing the distribution in this area. The State of Illinois, for example, which constitutes our number one marketing area, has an unusual law governing licenses for retail sale of our product. Unlike most other states, Illinois has only one class of retail license. This license permits a retailer to sell both beer and hard liquor, both for on-premise consumption and for take-home purposes. Because this license covers a broad scope, it is very costly.

Grocery and drug chains, because of the nature of their business, are not usually interested in catering to on-premise sales of beer or liquor, and most grocery operations, while they would like to carry beer, do not want to handle hard liquor. Therefore, a grocery store which wants to handle only beer for take-home purposes has to pay the same costly license fee as a liquor store across the street which is taking full advantage of all the license provisions. This competitive factor, as well as the cost factor, prevents most grocery stores and drug stores from carrying liquor licenses and selling our product. Therefore, the bulk of our sales are through independent package liquor stores, taverns or combination outlets.

The price of any given package of either of our brands varies so widely from outlet to outlet that pre-pricing is not at all practical. Even when a chain operation does obtain licenses for some of its stores, as do Walgreen Drugs, the A & P, National Tea, etc., the manager of an individual store is usually given considerable leeway by chain headquarters to price his beer packages competitively with neighboring trade, so that there may even be a variance in price between stores in the same chain. Also, because of the legal regulations controlling our business, beer is not delivered to chain headquarters, but is delivered to the individual retail store which possesses the proper license. Thus, if we attempt pre-pricing, a single delivery truck would not only have to carry the usual variety of packages of our brands, as they do now, but would also have to carry a variety of prices on each package, which would become too unwieldy for efficient operation.

Much the same condition, as far as the variance in price from retailer to retailer, applies to the other states in which we do business. Wisconsin, our second best market, for instance, has long been known as a foe of chain operations. Under their alcoholic-beverage licensing laws, any one chain can possess only two retail beer licenses, no matter how many stores there are in the chain. Thus, once again, the bulk of our Wisconsin sales are through independent retailers, each of whom may price any given package to suit himself.

Our sales and advertising departments have been examining the questions of pre-pricing for quite some time in a manner similar to our investigations of all other innovations in the packaging field. But because of the peculiarities of our distribution, as compared with other products distributed through grocery and drug outlets—very limited distribution through chain stores and a wide variance in pricing to the consumer from one retail outlet to the next—we have decided that at least for the present it is not practical for us to do any pre-pricing of our various beer packages.



Robert Moldafsky
National Merchandising Manager
Kitchens of Sara Lee, Inc.
Chicago

In a 350-mile radius around Chicago, the Kitchens of Sara Lee maintain route operations where we deliver Sara Lee quality baked goods to stores on a daily basis. These cakes are all sold pre-priced. In this area of distribution, we have advertised consistently over a period of time and have gained consumer acceptance for our products at an established price which the retail store maintains. By pre-pricing, we enable our route salesmen to spend more time on selling and merchandising, since they do not have to price mark each

Sounding Board [*Continued*]

package. Also, by pre-pricing, we achieve a more attractive package with the price always in the same position, clearly printed.

In areas where our products are distributed frozen, we do not pre-price our cakes. Experience has indicated that chains and independent stores have their own individual mark-up policies regarding frozen foods. They prefer to have the freedom of pricing on all warehouse merchandise.

Also, there is a variance of pricing practices in different parts of the country. We have found that some market areas are highly "price-promotion" conscious and since their retail prices fluctuate, do not want permanent prices marked on their frozen baked goods.



Edward Gelsthorpe
Vice President & Director of Marketing
Bristol-Myers Products Div.
Bristol-Myers Co.
New York

In our business, there is increasing distributor-retailer pressure these days for manufacturers like ourselves to pre-price merchandise. With the continued growth of self-service outlets, it is not surprising that we are subject to the plea for such pre-pricing.

Pricing in non-fair-trade states . . . retailers who because of unique locations put a higher price on merchandise . . . what happens to the manufacturer's inventories in the event of a price change?—these are just a few of the problems the manufacturer wants to face, as I see it, before he decides how far he can go on pre-pricing.



J. A. Anglada
Manager
Market Development, Film Div.
American Viscose Corp.
Philadelphia

According to food retailers, price marking is their most time-consuming single retail operation. Converters should be aware that manufacturers may therefore desire packages to be pre-priced to save costly time and labor at the supermarket. The printed price mark should duplicate the type of rubber stamp that is used by the retailer. It will then convey the impression that it has been marked by that local market, reaffirming the consumer's belief in competitive local conditions. Even tiny smudges can be duplicated by abrading the printing plate.

Package printers should pay more attention to the size, location and color of the price-mark spot. One of the advantages of pre-pricing film bags is that it is often difficult to affix a stamp when the product is in the bag. It is considerably easier to print the price on an empty, flat bag than on one filled with soft or fragile goods such as potato chips.

If not pre-marked, the space or spot for the price mark should be large enough for easy stamping and should be located in a place which can be reached without difficulty. Moreover, the surface upon which the price mark is made should be clear of other printing and of a color which will display the purple stamping ink most widely used by supermarkets. Illegibility often costs time at the check-out counter while one clerk consults another on the actual price of the article.

Many of these problems of spot location and size as well as of carton design, affecting the ease with which prices can be affixed in the local market, are eliminated by pre-pricing at the manufacturer or packager level. The price spot can then be placed at its most prominent location for display purposes instead of for stamping.

Pre-pricing should be considered as one further step in merchandising and selling your product. The price of an article is one of the most crucial selling features of staple and convenience goods. Take advantage of the price mark as a prominent selling device!

William J. Bader, *Packaging Div. Manager, The Dobeckmun Co., a division of The Dow Chemical Co., Cleveland:* Pre-pricing of nationally distributed products tends to handicap merchandising operations for the more efficient retail store managers.

This is especially true with packages requiring two or more different price slugs, which not only increase over-all cost of the package, but also make for unnecessary inventory problems. Consider the possibility of embarrassment that might be caused if a wrongly pre-priced shipment is made.

Supermarkets generally utilize improved merchandising techniques to make fullest use of all available floor and shelf space, often enabling them profitably to offer nationally branded products at lower prices. They cannot do so, however, with pre-priced packages.

Packaging surveys have indicated that the consumer wants to be able to see the price on a package easily. To accomplish this, without inhibiting retail merchandising efforts, we recommend a distinct, clear-cut pricing panel incorporated in the package design.

H. R. Rasmussen, *Vice President, Jewel Tea Co., Chicago:* We view the pre-pricing of packages in our food stores with somewhat mixed emotions—mixed between our desire to improve efficiency by pricing mechanically, against our desire to maintain the necessary flexibility of pricing that is, of course, inherent in the retail food business.

Except in the area of packages that have little chance in changing price, such as health and beauty items and kitchenware items, we find a reluctance to let ourselves be too enthusiastic about any other manufacturer's pre-pricing. It seems the price we would have to pay would be too great for the efficiency gained. For example, we have actually had to turn down some manufacturers who insisted on having an established price printed directly on their packages.

We are trying to find ways to pre-price some of the perishable products that we sell in our stores on a day-to-day basis, where we have control of the retail price because of the daily turnover, high unit volume and no warehouse inventory involvements, and we will continue to work in this direction.

U.S.I. POLYETHYLENE NEWS

A series for plastics and packaging executives by the makers of PETROTHENE* polyethylene resins

JANUARY, 1960 — U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corporation — 99 Park Ave., N. Y. 16, N. Y.

Packaging Notes

Throw-away Polyethylene Pillow Covers are now being manufactured for use in hospitals.

The strong, lightweight, polyethylene



Disposable polyethylene pillow covers for hospital use are convenient, easy to handle, help prevent cross infection.

covers are easy to handle... are disposed of when the cover is changed. The Manufacturer reports the pillow slips reduce danger of cross infection, eliminate autoclaving and help avoid waste. In addition, the slips may be used as disposable containers for contaminated objects. The manufacturer packages the product in pop-up dispensers containing 500 covers.

Polyethylene Bag-in-Box Packaging has significantly lowered shipping costs and improved the efficiency of a mid-western creamery.

The company reports it now ships 50 to 55-lb. containers of dairy products in 3-mil polyethylene bags packed in corrugated cartons in place of previously used returnable 10-gal. cans. Use of polyethylene helped cut shipping and maintenance costs by 17%, and saved valuable storage space necessary for the metal cans.

Further benefits are: greater control over package weight, shelf-life of products is doubled, insect infestation is eliminated, and leakers are greatly reduced.

Bags are made from polyethylene tubing which are completely heat-sealed across top and bottom except for a 5-inch opening at one corner. The bags are filled through the opening which is then tied shut with tinned wire. A shipping line speed of 125 to 150 bag-in-box units per hour is reported.

Polyethylene Wins Awards In Packaging Competition

Packages consisting in whole or part of polyethylene won six of the top awards in the recent National Flexible Packaging Association competition. Awards were presented during the fall meeting of the NFPA at White Sulphur Springs, West Virginia.

First prize in the "Break-Through" category went to a food concern for a polyethylene-coated bag for a line of fruit-flavored "icicles". Among the other winners using polyethylene as a film, laminate, or coating were bags for: water softener, hybrid corn seed, potatoes, marshmallows, and a polyethylene wrapping for bread.

U.S.I. Forms International Company To Serve Polyethylene Markets Overseas

New Unit Will Provide Technical Service, Sales, and Market Information

A new European company has been formed by U.S.I. to handle the overseas sales of PETROTHENE polyethylene resins and to provide technical service to customers and help in developing markets for polyethylene products. The new unit will be called U. S. Industrial Chemicals Company-International, Division of Sales and Development Company of National



Howard W. Woodham



Kenneth E. Cosslett

Distillers and Chemical Corporation (International) S. A., located at Kirchenstrasse 13, Zug, Switzerland. Operations of the new subsidiary began during October of 1959.

Well Equipped Facilities

A customer service laboratory will be an integral part of the new company. It will be completely equipped with processing and test equipment designed to meet European standards and operating conditions. The laboratory will be used to demonstrate processing techniques and for research and evaluation studies to help its customers develop new end-use markets and produce improved products. The laboratory will also include polymer testing equipment to insure product quality. The laboratory will service markets in the European countries, including the United Kingdom. Howard W. Woodham is the Manager of the new Technical Service Laboratory.

To Back Up Local Agents

Sales Manager of U.S.I.-International is Kenneth E. Cosslett, who has been U.S.I.'s Assistant Export Manager. According to Mr. Cosslett, U.S.I.-International's PETROTHENE resin sales will be made through its established representatives in European countries. The new company will be a supporting unit to help these representatives provide the close technical assistance which the polyethylene market demands.

Nuclear Reactors Use Polyethylene Plate

Polyethylene plate is used in nuclear reactors as a replacement for concrete in areas where weight and space limitations are of primary importance. Polyethylene plate exhibits excellent neutron-shielding capacity and is widely used for neutron-shielding protection on nuclear reactors.

Automatic equipment for uninterrupted extrusion of polyethylene plate is now producing 48-by-96-inch sheets of the plate at a rate of 6,000,000 pounds per year. It is extruded in thicknesses up to 1⅛ inches from PETROTHENE 100 resins in both natural and specially compounded forms.

Critical properties of the polyethylene plate produced by the continuous extrusion process are reported to be equal to or exceed those of plating produced by compression molding methods. The chief advantages of forming polyethylene plate by extrusion are a high rate of production and guaranteed freedom from voids.

Duck Hunters Use Polyethylene Film

Duck "ponds" of polyethylene film are being used by a number of hunters throughout the country.



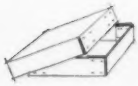
Photo courtesy True, The Man's Magazine

The novel man-made "ponds" are built by spreading polyethylene film in fields where ducks feed on their southward journey each fall. The sun's rays reflect from the polyethylene film which appears to be open water in a frozen field. A spread of decoys further heightens the illusion.

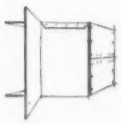
Hunters say by the time ducks realize their mistake, it's usually too late!

DO YOU HAVE a new polyethylene packaging development you'd like the industry to know about? Make it routine to send your information on new developments to U.S.I. POLYETHYLENE NEWS.

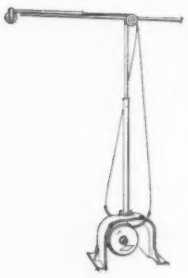
Address the Editor,
U.S.I. POLYETHYLENE NEWS, U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corp., 99 Park Avenue, New York 16, N.Y.



CLOSURE IDEA BULLETIN

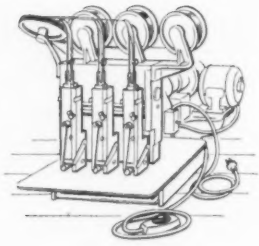


For Users of Fibreboard Boxes

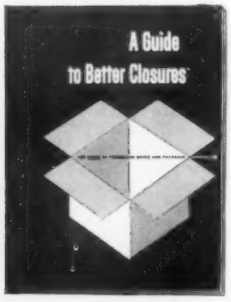


Users needing low-cost, high-volume closure of all types of fibreboard boxes find characteristics of wire stitching method particularly advantageous...economical ...continuous long runs without frequent need to reload...coils hold enough wire for many thousands of stitches.

Wire tangling, snagging, eliminated by positive brake action on Acme Steel 25 and 50 lb. coil holders...machine or floor mounted. Model P1A0 coil holder for single head stitchers holds two 50 lb. coils of wire...wire feeds from first coil while second coil is ready for instant threading ...floor standing model...does not have to be fastened in any manner to floor or stitcher. More details in AD-159.



Toy manufacturer uses Acme Steel Wire Stitcher, Model 600 Champion, to stitch plastic bubble to display card as protection over toy accordion. Stitched cards assemble faster, stay intact better. Operation described completely in W4-2.

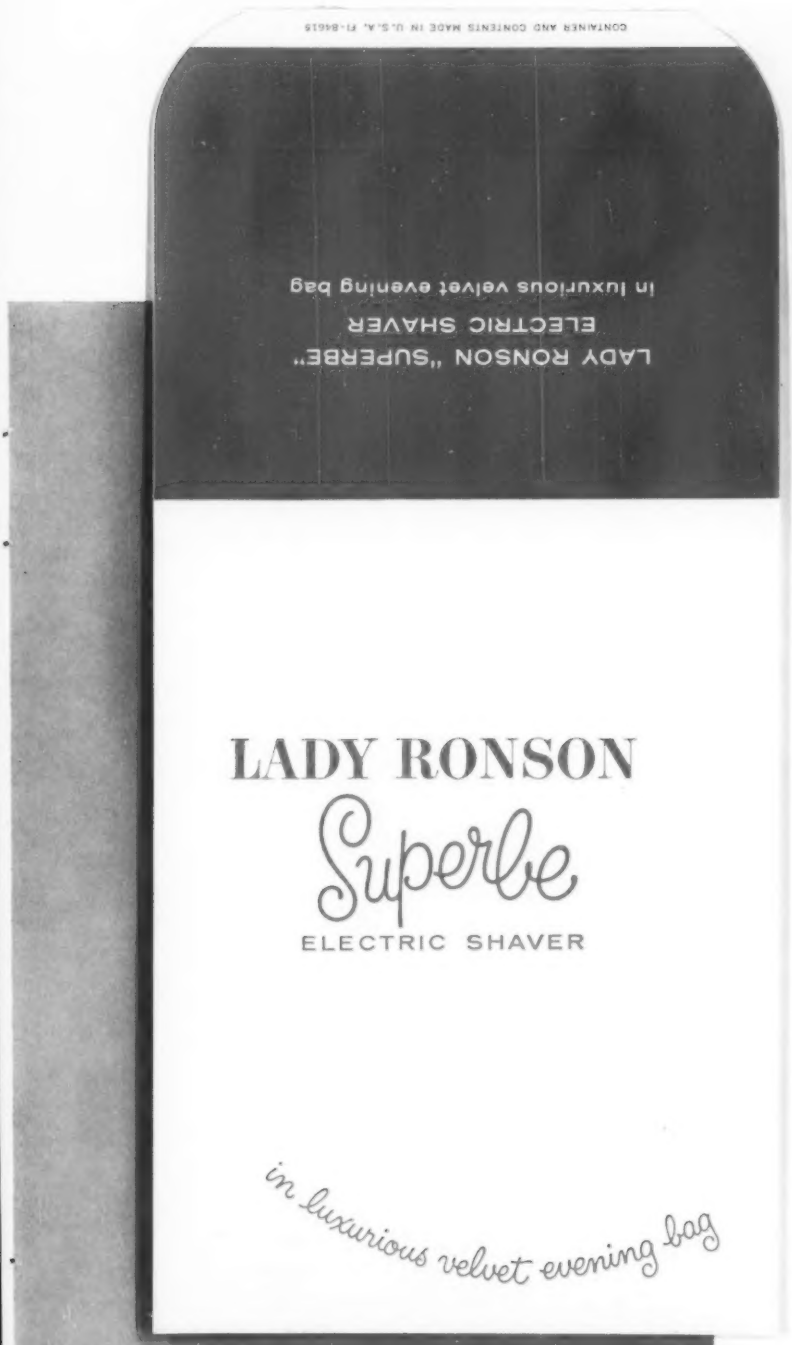


Free Booklet, "A Guide to Better Closures" ...an impartial report on glue, tape, staple and wire stitching closure methods. Points the way toward savings, superior product protection...send for your free copy today.

Contact your Acme Idea Man for additional information and ideas on better ways in which wire stitching can serve. His intensive training, backed by Acme Steel Company's 75 years of experience with closure methods, are at your service. Write Dept. MDW-10, Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois, for information on the complete Acme Steel line of box, book and metal stitchers.

ACME STEEL WIRE STITCHING

Carton produced by Sample-Durick Co., Inc., Chicopee, Mass.



Smart LusterBoard packaging with a feminine flair

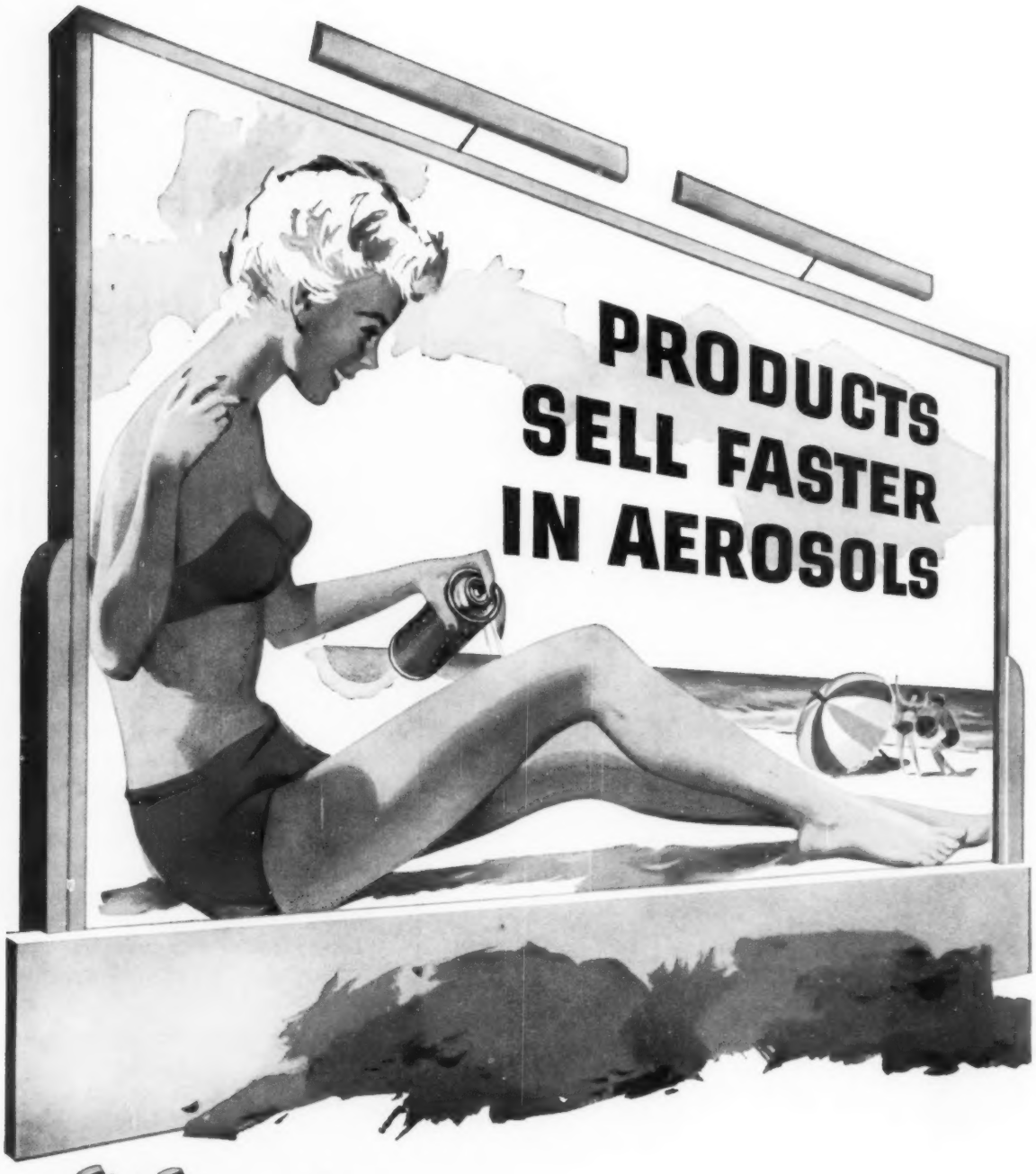
Ronson designed its LADY RONSON Electric Shaver, with a luxurious velvet evening bag, specifically for women — and wanted a package to compliment the product and attract women to it. Mirror-smooth LusterBoard lent itself perfectly to the job. Note the combination of tasteful color printing and delicate embossing. Most of the fast-selling household items — drugs, foods, cosmetics, etc. — are bought by women. And the products with the strongest buy-appeal for women are often packaged in LusterBoard. Here are a few of its advantages:

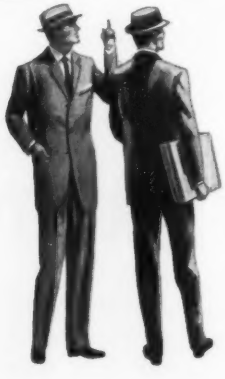
- Smooth folding, superb embossing effects
- Fast ink setting
- Maximum fidelity of halftone reproduction
- Range of 14, 16, 18, 20, and 22 point thickness

Warren's HIGH STANDARD

LusterBoard

Samples, demonstration pieces, and technical information are available from: S. D. Warren Company, 89 Broad Street, Boston 1, Massachusetts





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World Report

Abstracts from foreign packaging magazines

EAST GERMANY

Report from the Leipzig Fair

A sidelight on packaging in East Germany is given in a report on the Leipzig Fair by the German correspondent for *Packaging Review* (England). With East German packaging comparable in some ways to that of England in immediate postwar days, he writes, large amounts of paper, board and other materials are still used for applications where in the west they have long been succeeded by synthetic materials. Aerosols, now so common in England and Western Europe, are still very much a thing of the future in East Germany. The demand for more and better packaging materials in the Communist Republic, the reporter states, is growing fast, even though East Germany's shop windows are still full of cheaply and shabbily packed items at present. Also, the control of much of the consumer-goods industry by the state has robbed producers of the need to use attractive packaging designs to win customers.

Both lettering and design, he says, were uniformly poor on most East German packaging, pointing out several reasons. First, with only a small amount of consumer advertising in the country, the number and quality of commercial artists is not high. Secondly, the general lack of competition cuts the need for good design. Also, an important factor in a Communist country is that design must be "politically oriented" in that it must "adapt itself to the principle of a worker-peasant state" and void any western influences.

Foreign exhibitors were represented particularly in the field of transparent films, for which, apparently, there is a demand unsatisfied by home output in most of the Communist-block countries. Cellulose film was exhibited by only one producer behind the Iron Curtain. West Germany's two main producers of films and plastics for packaging were well represented, as was Sweden's leader in this field.

Polyethylene is just starting to be used for packaging on any scale at all behind the Iron Curtain. Only one Communist-country firm exhibited this product. Next year, however, the East German State Company is expected to use polyethylene for the packaging of underwear, hosiery and other items, the article states.

Significant was the comparatively high standard of packaging used for East Germany's export goods, according to the report. One specialist firm in this line exhibited partitioned paper boxes for a coffee pot and two cups of heat-resistant Jena glass, specially fitted safety boxes for the packaging of export cameras and silk-lined perfume boxes.

Aluminum foil appeared to be particularly popular in East Germany, so widely used that production is expected to be stepped up 400% by 1965. Foil was exhibited in combination with many types of paper, waxed and greaseproof papers, and laminations with cellulose film.

ENGLAND

Machine for polyethylene bread wrapping

Further reports are coming through about an English machine for wrapping bread in polyethylene film that overcomes the difficulty of the film's limpness in gauges as thin as 0.00075, according to *Packaging News* (England). Because limp polyethylene cannot be pushed easily around objects to be wrapped, the designers of the new machine developed a unit that uses the loaf and folding plates to grip the film at the start of the wrapping operation and pull it from the reel. A further advantage of the system is that the size of each loaf, carton or tray controls the amount of material pulled from the reel. A flight conveyor carries the loaves onto an inclined section of the conveyor and delivers them intermittently on to the elevator receiving plate. As a loaf moves onto this plate, it pushes into a draped length of film, still linked to the reel, and folds the free end of film beneath it to form the under flap. At the same time, the wrapping material is gripped between the elevator receiving plate and the leading edge of the loaf, and the first end folds are made.

The elevator plate lifts the loaf to discharge level while a bar moves down to pull more material from the reel and a serrated knife cuts the wrapper free. The under lap and the third and fourth end folds are completed immediately before the package moves into the heating unit. For one machine cycle the package remains between the heating plates. It is then pushed between the cooling belts of the discharge unit that runs above the in-feed conveyor in a reverse direction. "Static" anchors the free end of the film to the metal cutting blade and under-lap roll. To bring the film under control after cutting, the machine is fitted with a compressor that directs a jet of air at the "belly" in the film caused when it sticks to the knife. This blows the free end of the film between the in-feed conveyor and the elevator plate to receive the next loaf.

The problem of the multi-layer end seals is solved by moving the wrapped loaf between the end-sealing elements by two siliconed glass-fibre belts, which also carry the wrapped loaf between water-cooled plates on the way to the discharge platform. Consequently, the ends of the package do not slide against any surface until the seal is cooled. Rated speeds are 30 to 35 loaves per minute.

SWEDEN

Progress in frozen foods

Growing acceptance of frozen foods in Sweden is indicated by statistics related in *Emballages* (France). The 20,000 food stores in Sweden reportedly possess 12,000 frozen-food cabinets in contrast to only 200 in 1947. And from 200 tons in 1947, the amount of frozen food sold in Sweden was estimated to have increased to 12,500 tons in 1957, representing about 4 lbs. per capita. The Swedes predict the sales of 36,000 tons in 1960 and 100,000 tons by 1965. As in America, the report states, Swedish consumers are buying more completely packaged, heat-and-eat frozen meals.

ISRAEL

Loans for paper and cellulosic production

A private Israeli firm has obtained a credit of $3 million for purchase in the United States of $4.8-million worth of industrial material for the production of cellulosics and paper, according to *Emballages* (France). The firm intends to build a plant for the production of adhesives and expand existing facilities for paper making in line with Israel's industrial expansion plan. At present Israel produces newsprint, writing papers and kraft. Eventually it hopes to make paper of straw and other available agricultural fibres.

ENGLAND

Polyethylene packaging of textiles

A machine that provides a neat, tight wrap for shirts, blankets, linen goods, leather items, also buttons or pencils mounted on cards, is described in *Packaging* (England). The machine, of German manufacture, is designed to produce either a complete seal or to allow an opening for cus-

tomer inspection when this is desirable. The machine operates from a reel taking polyethylene tubing, either plain or gusseted, and slit down one side. The tubing so slit is passed over a dividing plate, one face of the polyethylene tubing being in front and the other at the rear of the plate. The article to be wrapped is fed through the slot on to the plate and emerges between the two plies of film. Due to the weight of the article, the tubular film is drawn downward until it reaches a support plate. The film is transversely heat sealed and then cleanly cut across its width, immediately above the object. A similar transverse seal is made above the cut-off line to provide a base seal for the succeeding package. According to requirements, the slit side of the package so formed can be left open and unsealed or—if the film is sufficiently wide—a full closure by means of heat sealing can be provided. With one operator, the machine can package up to 1,500 items per hour. The machine is recommended for packaging carded items as well as textiles.

WEST GERMANY

Killing bacteria in plastics bags

In trying to supersede sterilization with heat, tests have been carried out with gaseous ethylene oxide, according to an article in *Die Neue Verpackung* (Germany). The results, the report states, show that in heat-sealed but permeable-to-gas plastics bags, a considerable killing of germs can be achieved under specific conditions. Although the investigations are not yet completed, the authors of the article point out that it is evident that this degree of sterilization will be sufficient for a number of purposes.

ENGLAND

PATRA'S *revised research program*

The revised research program of the Printing, Packaging & Allied Trades Research Assn. (PATRA) is outlined in *Packaging Review* (England). The seven major subjects to be covered are: measurement of journey hazards; a study of the basic principles in the design of efficient packages; the properties and behavior of new packaging materials; the prevention of mold and insect attack; recording the climatic conditions to which goods in storage and in transit are subjected; the application of liquids to solid surfaces, particularly laminates and coatings, and improving the strength, appearance and packaging-line performance of cartons.

An interesting aspect will be continued study in the development of instruments for inclusion in shipping packages to record the shocks to which they are subjected in transit. Rheological work by PATRA's Printing Div. to reduce troubles such as ribbing of adhesives applied in laminating and the varnishes applied to cartons will also be extended.

FRANCE

Fast bagging of cotton net

Onions, potatoes, apples, nuts and other produce, such as oranges, can be bagged in cotton-net bags at the rate of 1,000 an hour on a new semi-automatic machine made in France. The new unit, described in *Packaging News* (England), is designed to operate in conjunction with weighing equipment. Weighed batches of produce are discharged into a metal tube that carries, on the outside, several yards of tubular cotton netting. The end of the netting, fastened with a metal wrap-around clip, is held in position by a locking band. When this ring is opened it releases the netting and the weight of the contents carries it down to a turntable. Feeding of the netting stops as soon as the bag reaches this turntable. When the operator swings a lever inward, the turntable starts rotating to twist the neck of the bag tightly before two hog-ring-type staples are applied, cut from a pair of reels housed on the lever. Immediately afterwards, a knife cuts the netting between the two seals to sever the filled bags from the web, leaving the netting with a bottom seal already applied, ready for the next weighed batch of produce. As the operator moves the lever outwards again, the locking band is released to allow the next length of netting and its load to slide down to the turntable.

WEST GERMANY

New plastic formulations

A low-pressure polyethylene which can be processed into new kinds of high-quality packaging materials is announced in *Packaging Review* (England). The polyethylene made by the Ziegler-Natta low-pressure process is coming into production at Marl, West Germany. Films made of this polyethylene are reportedly glass clear and have very good gas and atmospheric resistance. Other developments concern new base materials for the plastics industry which are expected to be developed from cyclododecatrene. Concentrated research is at present going on into the potentials of this chemical, the structure of which is composed of three-ring tied butadiene molecules. Polypropylene is soon to be produced on a large scale and other polyolefins are expected to be put on the market soon. A large number of new polymers and co-polymers from olefins and diolefins are soon to be added to the range of elastomers. Production of PVC and polystyrene has been increased, and of special interest to the packaging industry will be the new impact-proof PVC and a PVC foam material.

ENGLAND

French mustard in a "hot dog"

In a molded polyethylene container similar to those in the shape of lemons for lemon juice, a British firm, Hax, Ltd., is marketing French mustard in a container realistically simulating the shape of a hot dog. The container is equipped with a screw cap at one end. As unusual as the container, according to *Packaging* (England), is the counter merchandiser for the package—a vacuum-formed tray to hold the "hot dogs," topped with a paperboard riser identifying French mustard with an illustration of the Eiffel Tower.

ENGLAND

Polystyrene bottles for vinegar and detergents

Another variation of thermoformed bottles is indicated by a container made of polystyrene, suggested for vinegar and detergents in *Packaging News* (England). Filled through the bottom, it is sealed with a plug-type base which reportedly adds to its stability. It is opened by puncturing the container's cone-shaped top.

WEST GERMANY

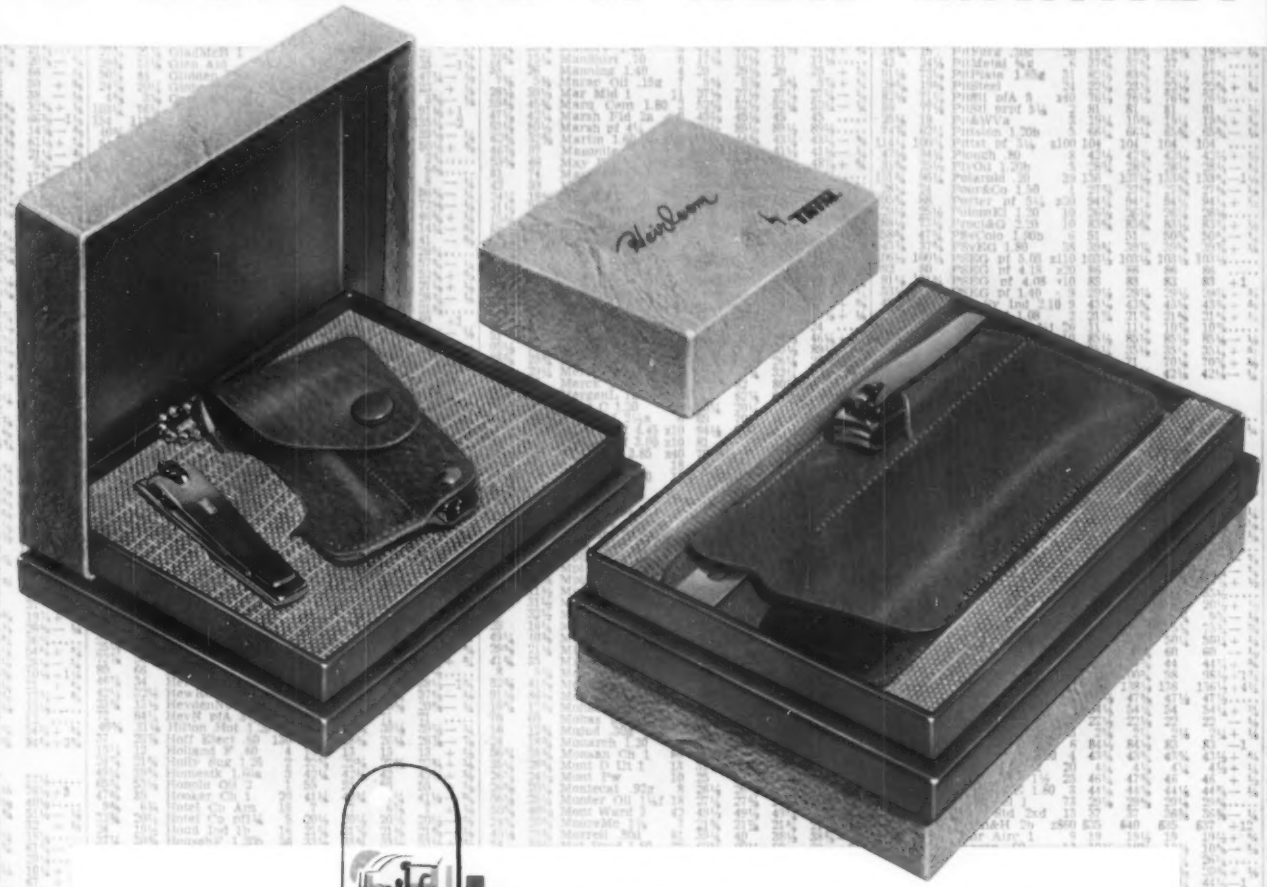
Rigid PVC containers

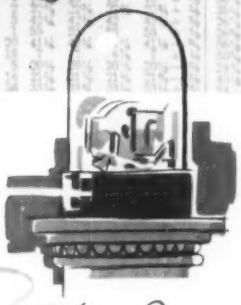
Jars and other containers of unplasticized PVC are rapidly gaining ground in West Germany, according to a report in *Packaging Review* (England). Most brands of margarine, in particular, are now packed in such jars since, under West German law, margarine must be packed in a manner totally different from traditional butter wrappings. Flat PVC containers are being used also for mixed salads in mayonnaise, for mayonnaise itself and for sliced sea salmon.

Also vacuum formed of PVC are Father Christmas molds for chocolate. In the preparation of these, the chocolate is poured into the two halves of the shell and the mold is closed without any special sealing media. The mold acts both as a form and a package for the chocolate figure. Another noteworthy development in Germany is water-soluble polyvinyl alcohol film, which is being suggested for water-soluble packaging of disinfectants, weed killers, detergents, bath salts, cleansing media, dyes, caustic and mordant materials, tree and plant roots.

For additional information, write: World Report Editor, MODERN PACKAGING, 575 Madison Ave., New York 22.

THESE BOXES MEANT BUSINESS IN BUILDING A NEW MARKET





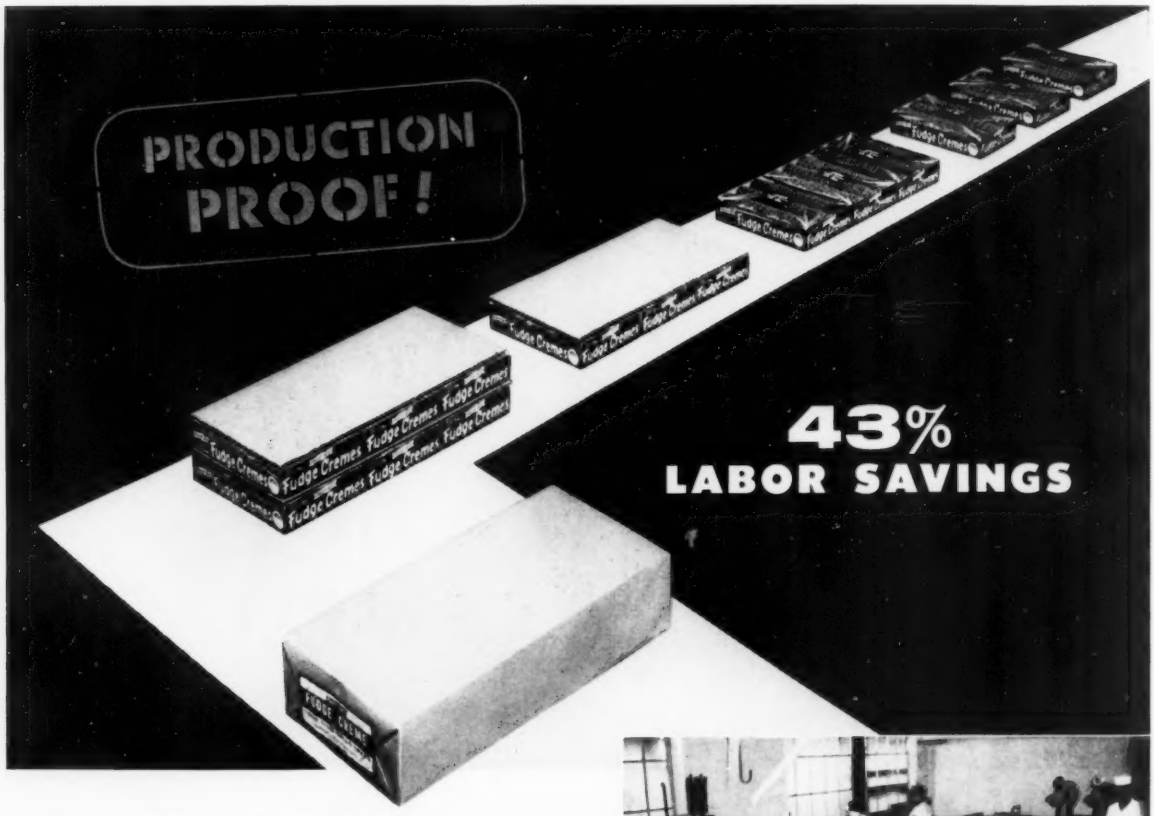
New *Heirloom*
Better gift accessories
by TRIM®
Captured a new market
...Sales tripled

The W. E. Bassett Company's TRIM line of manicure and pedicure specialty items has long had fine acceptance in drug, tobacco, and syndicate stores. When introducing their new "Heirloom" line for department store, men's accessory store and gift shop distribution ... Bassett gave the sets aristocratic names ... fine pigskin cases ... chrome or gold plate ... developed compelling display fixtures.

A key portion of this "dressing up" program was an assignment for Dennison to create a complementary gift box/display box. Though economical, the resulting boxes reflect masculine simplicity ... they have a rich, leather-like exterior and fabric-toned interior. When open, the boxes display the products at their very best.

Result: the new market was successfully developed. The first five months of 1959 indicate a three-fold sales increase over the same period for 1958. Dennison enjoys working with alert, modern merchandisers such as W. E. Bassett Company ... and in contributing their design skills to imaginative marketing programs. Can we help your product? Write: Dennison, Box Division, Marlboro, Massachusetts.

Dennison
HELPING YOU COMPETE MORE EFFECTIVELY



WITH HAYSSEN AUTOMATIC ACCUMULATOR AND BUNDLER

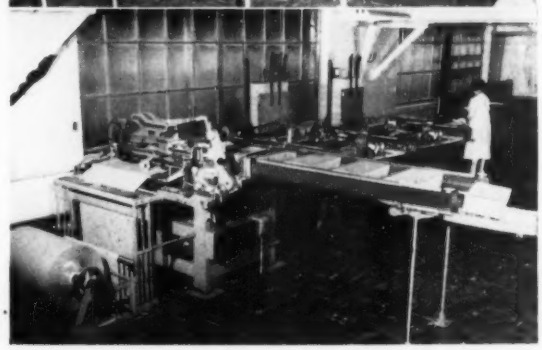
LABOR SAVINGS OF 43% are being reported by companies who have changed to the Hayssen system from the most efficient semi-automatic methods of accumulating and bundling.

MATERIAL SAVINGS OF 87% are being realized by users of modern Hayssen Accumulators and Bundlers who have replaced carton methods of packaging for shipping. Percentage is figured on cost difference between standard cardboard cartons and roll kraft paper. Check your carton costs against kraft paper at $0.002 per sq. ft.

FASTER OPERATION, just seconds from the start of the accumulating operation to the shipping room are reported by all users of Hayssen equipment — an especially important factor when handling ice cream and frozen food products.

BETTER PACKAGING claim all who have made the change. Hayssen wrapped bundles are tighter, neater and better sealed than was possible by older methods using gummed tape.





"The Hayssen accumulator and bundler has reduced our packaging labor requirements far below that which was needed by the semi-automatic system it replaced," reports Mr. W. Schneider, Chief Engineer of Schulze & Burch Biscuit Company. The equipment includes an accumulator, bundler and automatic labeler. The photos were taken in the firm's Chicago plant.



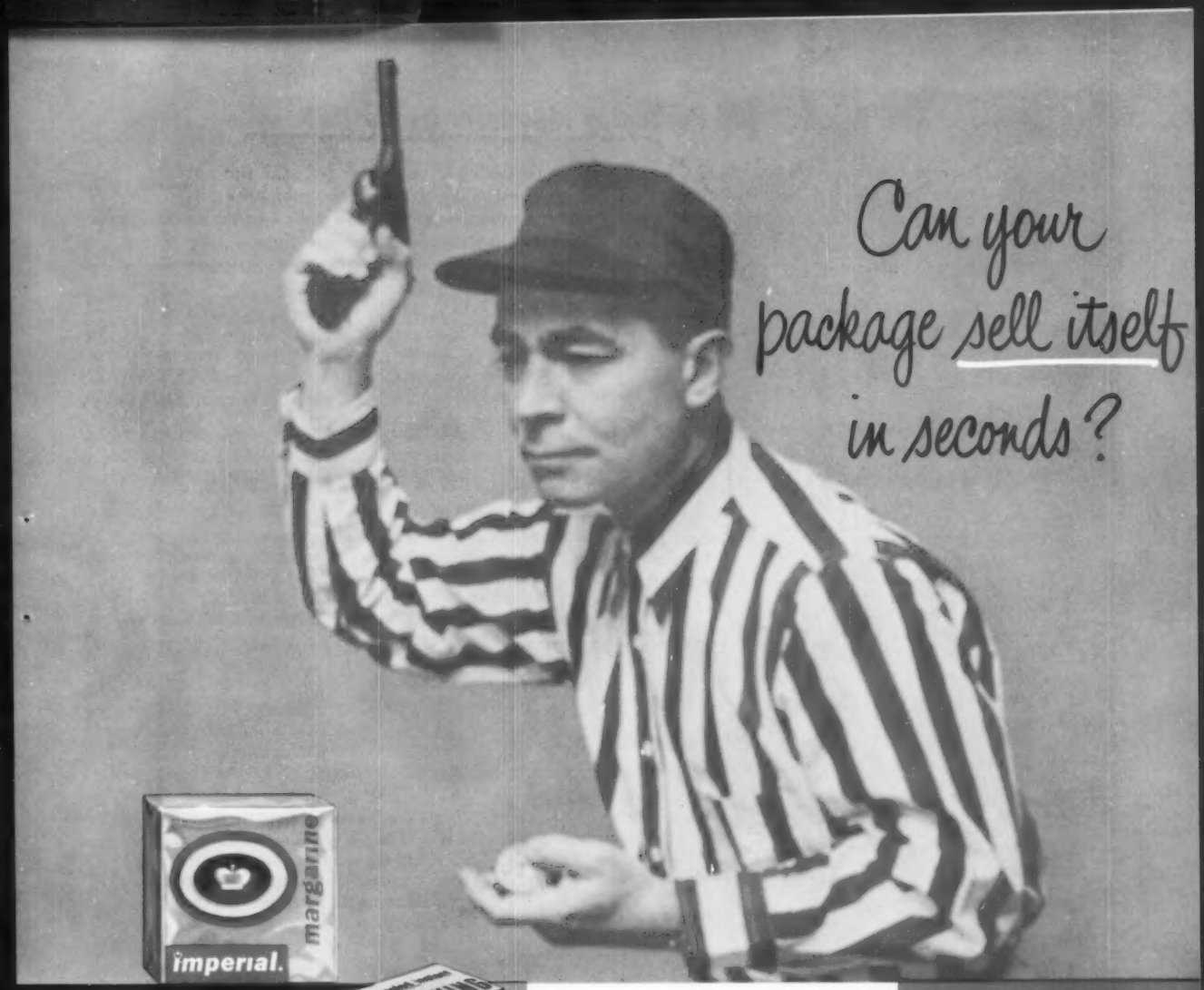
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A Lithographed Carton—Winner of National Lithographic Awards Competition
Designer: Thomas Laufer Associates

B Rotogravure Printed Foil Overwrap

C Rotogravure Printed Overwrap
Designer: Otto Keil

D Flexographic Printed Polyethylene Sideweld Bag

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This insert lithographed by Milprint, Inc.

What Should Packaging Machinery Really Do?

Put a product into its package? Obviously! And most any packaging machine will do that—*one way or another.*

But you already know just any machine won't do the packaging job you want done. "One way or another" isn't good enough, because your requirements aren't like anybody elses. At least not quite.

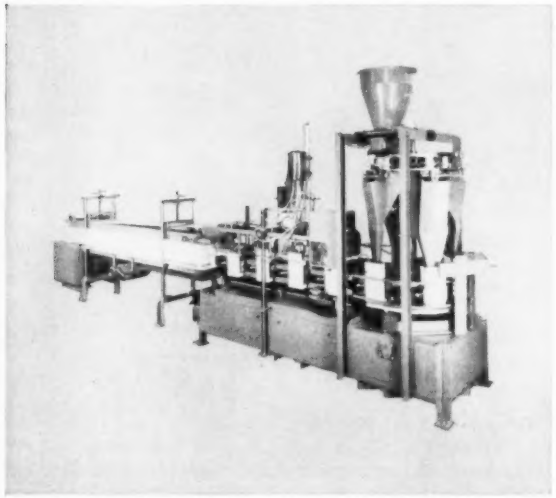
You have to be concerned with the not so obvious aspects of packaging—the unnecessary packaging cost that can make or break a competitive advantage . . . the savings here and there that add to your profit and production efficiency . . .

We're talking about packaging machine performance of course. *With it, you're in. Without it—well . . .*

HOW DO YOU MEASURE PACKAGING MACHINE *PERFORMANCE?*

It isn't always easy. Particularly when you're comparing competitive equipment before you buy. What you want to find out is how much the machine will do for you.

For example, let's take a machine that forms, fills and seals cartons. A machine that will handle anything from grass seed or dog biscuits to powdered milk. Here's the kind of performance you can measure:



The machine should be automatic. It should do as much of the packaging job as possible. By itself. Failure within the sequence of forming, measuring, filling and sealing should be automatically detected and controlled.

You really save
with the Triangle Carton Sealer
—fully automatic . . . delivers only properly filled and sealed cartons . . .
will even insert coupons or pouring spouts . . .
can be equipped with Triangle net weighing scales, volumetric filler or auger packers.

The machine should be flexible. It should handle all your carton sizes. Changeover should be as simple and fast as possible.

You really save
with the Triangle Carton Sealer—
handles carton sizes from 4″ x 1¾″ x 6½″ to 10″ x 3″ (or 8″ x 5″) x 16″ . . .
changeover throughout this range is much simpler and faster than normally expected.

The machine should be economical. If it costs too much to buy, all the refinements of automatic control aren't practical. What you want is the greatest speed and performance for the most reasonable investment.

You really save
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capable of delivering up to 70 cartons per minute . . .
push-button control, automatic operation
at a price equal to many machines without it (far less than you'd expect)!

What better way to measure performance! Speed, flexibility, automatic operation and all at a price that's right. Make sure you get what you need by having our experienced packaging engineers study your requirements. Their analysis, specified in detail, will provide a measure for comparison. With it you will be able to know which machine is right for you.

Incidentally, Triangle equipment compares very favorably in all cases. In many, it is outstanding. Write us in Chicago. Ask to have your local Triangle representative contact you. No obligation, of course.

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Editorial Memo

Ghost of the cranberry bogs

The Great Cranberry Scare has subsided, but its ghost still lingers to haunt any packagers who may still believe that the law doesn't mean what it says in the Food Additives Amendment—or that the Food & Drug Administration is going to be benevolent in its administration of the law.

The public uproar over the threatened denial of the traditional Thanksgiving berry obscured the real significance of the cranberry crackdown. Let's think about it, in terms of the imminent application of the same law to packaging materials.

No. 1, there was an element of defiance. Cranberry growers who had disregarded instructions for approved use of the weed-killing chemical also ignored requests that they voluntarily withhold their crops from the market. They couldn't believe it was serious.

No. 2, there was and still is a big element of doubt. The argument as to whether aminotriazole can really induce cancer in humans, and if so whether it takes a whiff or a carload, will rage for months. The F&DA knows only that the chemical did produce cancer in rats and, under the new law, it has no choice but to act to prevent foods containing any trace of the chemical from reaching the consuming public.

No. 3, the case dramatically demonstrates the new situation—that the burden of proof of safety of his product is now on the food producer and not on the Government, and that the Government can act on suspicion without waiting for conviction.

Finally, there is a feeling here that this case—out of the many, including some questionable packaging materials that could have been picked—was deliberately chosen for the first crackdown simply because the subject and the timing would gain wide publicity and thus wave an inescapable warning in front of everyone affected by the law.

Will packaging people fail to see the meaning? It ought to be clear now that there is no room for comfort in the feeling that the danger of a chemical in a packaging material is minimal or unproved; that the law can safely be ignored, defied or put off, or that the Government "wouldn't dare to put us out of business."

The deadline for compliance, or for evidence of an all-out effort to comply, is March 5—just 60 days away. As of Dec. 1, only 50 petitions for clearance of additives had been received by the F&DA. Unless something is done within the next 70 days, a lot of foodstuffs more important than cranberries are going off the market.

For its articles pointing out the seriousness of the Food Additives Amendment, this magazine has been accused, in some quarters, of being alarmist. The alarm, we fear, in the light of the facts, has not sounded half loudly enough.

The Editors

Modern Packaging, Executive and Editorial Offices, 575 Madison Avenue, New York 22, N. Y. Teletype: TWX-NY 1-3063. Cable address: "Breskinpub."

PAPER NEEDS THE TOUCH OF TALENT

Early German papers were hand made by depositing rag fibers evenly on wire mesh, a process requiring considerable skill.



But it took the talent of an Albrecht Durer to convert mere paper into masterpieces such as this priceless 16th Century woodcut.



THE HOLY FAMILY WITH JOACHIM AND ANNA

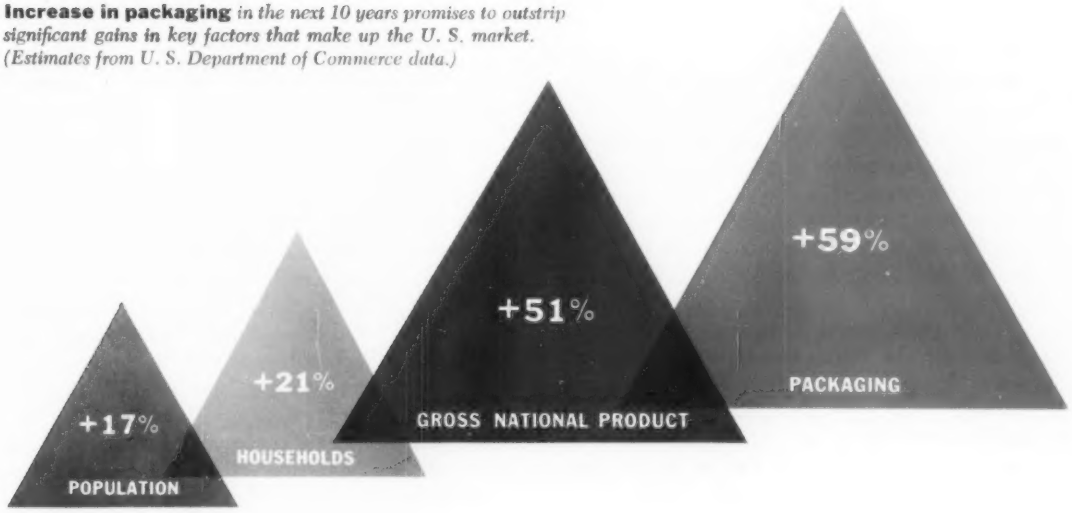
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January 1960 Vol. 33 No. 5 MODERN PACKAGING

Increase in packaging *in the next 10 years promises to outstrip significant gains in key factors that make up the U. S. market. (Estimates from U. S. Department of Commerce data.)*



The surging '60s

We enter a new decade in which the combined forces of a dynamic economy and a burgeoning technology in packaging promise growth in this field beyond any precedent. Here are the things to watch

Suddenly, it's 1960—and packaging, which dates its recognition from the '20s, enters its fifth decade. This is a decade which, from all indications, will far outstrip any that has gone before.

The potential for packaging in the '60s is more than just a simple reflection in dollars and cents of the new decade's brilliant economic prospects, based on a steadily rising standard of living for a steadily growing population which, by the year 1965, will reach 200 million.

What makes the 10-year outlook in this field particularly bright is the unrelenting surge of a marketing trend well established during the past few years: the expanding demand by dealers for self-selling, self-service packaging and by consumers for convenience packaging of a growing number of different products moving through an increasingly greater variety of retail outlets.

The significance of this irresistible revolution in retailing is that marketing or merchandising strategy is becoming more than ever *packaging strategy*. The product's package—from the characteristics and protective properties of its components and construction to its surface design—more and more will set the sales pace for American business.

WHAT'S AHEAD

Consider the market potential in the 1960s, based on U.S. Department of Commerce data:

- Population, currently nearing 180 million, will rise to about 210 million by 1970, up 17%.
- Households are increasing at a rate of 900,000

per year, but are expected to gain 11 million for a total of 63 million, a 21% rise.

- Working wives will increase in number from 18 million to about 24 million. This means a greater demand for packaged products, particularly the type that will save time and effort.
- Gross National Product (total output of goods and services) for this year will reach $480 billion and is expected to hit $725 billion by 1970, an increase of 51%. The GNP includes products purchased for personal use or consumption.
- Consumption of packaging is rising faster than either population or Gross National Product and, if present trends continue, per capita use of packaging in the United States should rise another 20% by 1970.

Packaging's growth is as clear in the statistical picture for the '60s as that of any of the nation's major industries—among which, as an industry, packaging now ranks sixth. The value of consumer products, most of which will be packaged, will exceed $200 billion a year in the new decade, according to Department of Commerce estimates. This means that at least *two trillion dollars' worth* of durable and non-durable personal-consumption goods will move to market in the next 10 years. (In the decade just ending, the total was approximately 1¾-trillion-dollars' worth.)

Not only will packaging be of steadily increasing importance in selling this mountain of goods to consumers, but it will play a growing part in the industrial and shipping phases of business.

Packaging's growth during the '60s will be immense. The annual value of containers has been growing at a rate 16% faster than the rate of increase in the Gross National Product, according to a Department of Commerce study. If this relationship is maintained during the next 10-year period, the value of containers to be produced will rise 59% in comparison with a predicted GNP increase of 51%.

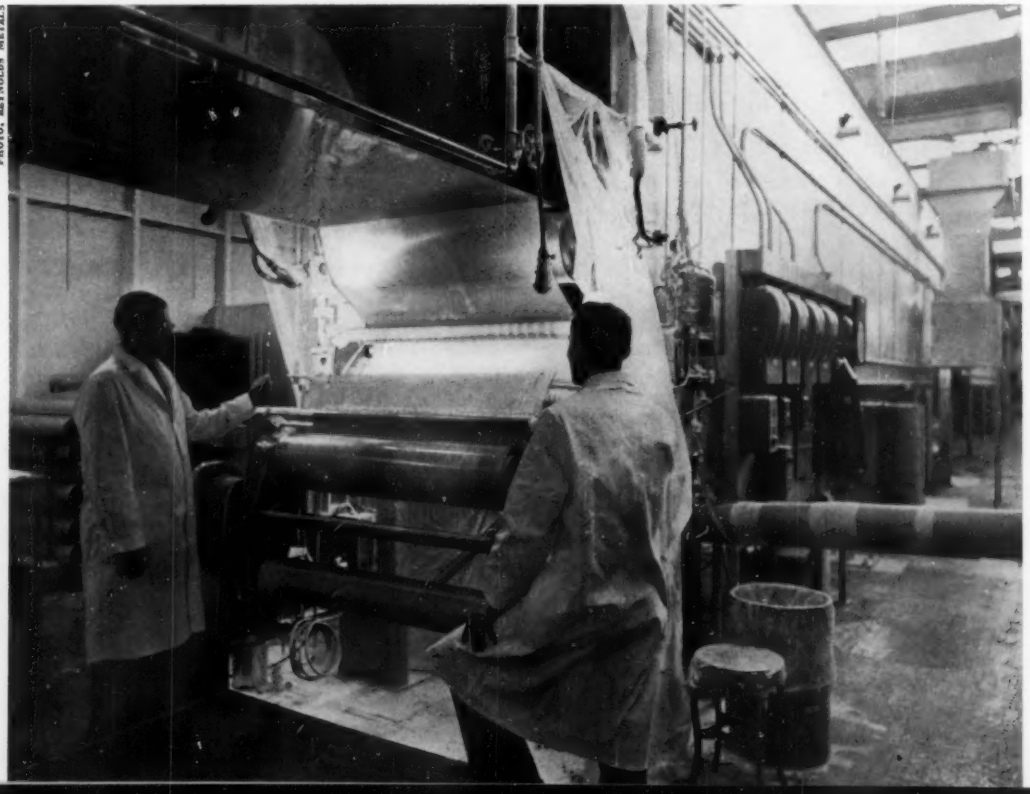
In the immediate future, under the impact of the Food Additives Amendment (1)[1] and the new Textile Labeling Act,[2] packagers faced with a little revision will find it practical and rewarding to go all the way. Package change and revision will be a fact of life to an extent not previously experienced.

Strategic use of new packages was due to become more intense in 1960 anyway. During the past year new packages, particularly for foods, drugs and tobaccos, were being introduced with much greater frequency. There were more significant new packages reaching store shelves during 1959 than in any previous year within memory. These packages are

[1]Numbers in parentheses identify References appended.
[2]The Textile Fiber Products Identification Act becomes effective March 3.

Production of packaging films *in the coming decade will involve new materials and new methods. Here a giant casting machine, in an ultra-modern new plant, produces PVC film by the casting method.*

PHOTO, REYNOLDS METALS



Some recent packaging developments of growing significance for the new decade

	Example	Advantages & significance	Uses & potential uses
High-density polyethylene bottles		Plastic bottles are now a major challenge on the basis of light weight, attractiveness and economy. Use of other plastics will enhance this competition with established materials	Detergents, personal products, industrial products, foods
Heat-transfer labeling		Multicolor printing with economy. This new method should be a boon for the rapidly growing plastic-bottle field. (This method is also useful for printing flexible materials)	Products that can be packaged in plastic bottles, especially utility types
Aluminum cans		Major advantage at present is wide choice of styles, sizes and attractive forms—especially advantageous for aerosols. Foothold in beer, foods and oil is likely to spread gradually	Aerosols, drugs, foods, personal products, oil, beer (for details see "The Can Looks to the Future," p. 92)
New thermoforms		Blister, skin and all-plastic packs will continue to make large share of packaging news based on new materials, techniques and equipment. Advantages and successful applications will grow steadily	Complete range of self-service, self-selection products from food to industrial items
Ultra-light glass		Containers like the new one-way "shorty" beer bottle make glass increasingly more convenient and economical. New coatings are improving glass strength. New coloring methods are available	Beverages, foods, cosmetics, medicines, household products
Polyethylene bread wraps		Successful handling of polyethylene and other plastic films for bread, tobacco and similar products is here or near and will have far-reaching effect	Bread, tobacco, paper products, textiles, carton overwraps

(Chart continued on next page)

(Continued)	Example	Advantages & significance	Uses & potential uses
Foil pans		Anticipated trends to cook-and-serve packaging will rely heavily on these excellent and improving containers. Continuing additions in types, decoration, filling equipment are setting a fast pace	Cook-in-package prepared foods, desserts, fancy foods, jellies
Tetrahedral cartons		Continuing progress in packaging of milk and other liquid products will undoubtedly stem from the use of tetrahedron types	Dairy products, fruit drinks and other liquids or semi-liquids (for details, see "Sterile Milk in Paper," p. 82)
Pouches in cartons		Packaging systems based on a combination of carton and pouch are increasingly important for their function and performance for semi-liquids and especially for new convenience products	Frozen foods, prepared foods, liquid and semi-liquid products
Cook-in bags		This time and effort saver for consumers seems destined for large-scale growth. Films, foils and coated papers are contributing advances. Any progress in electronic cooking or irradiation will cause this method to boom	Prepared foods, specialty dishes, vegetables. Also institutional foods
Moisture-resistant corrugated		This new board, plus dramatic gains in printing quality, self-sealing cartons and foam-cored cartons, are among the many advances in corrugated	Complete range of products. Range will extend to items now in heavier containers
Polyethylene shipping bags		Weatherability, transparency, attractiveness and scrap reclaim are important advantages. Improved types of polyolefins in thinner gauges such as 5-mil polyethylene may challenge on a cost basis. Shippers should watch this development carefully	Seeds, fertilizers, bulk chemicals, foods and various industrial products
Molded foams		Many new properties and applications of plastic foams are possible. Molded polystyrene packages give solid support, reduce loading and handling costs	Complete range of products: especially toys, appliances, gifts, personal items, doctors' samples, etc.

making retailing more dynamic and shopping much more interesting for the customer.

THE CHALLENGE OF 1960

Just look at some examples of the packaging-merchandising campaigns taking shape for 1960:

In beverages alone, consumers will be asked to choose among soft drinks in cans, beer in "shorty" one-way bottles, beer in aluminum cans, fruit-drink concentrates in aerosols and soft-drink mixes in unit packs. Packaging leadership will tell the story for sales of many individual beverage brands.

A titanic tug-of-war is about to be joined between high-density polyethylene bottles and metal cans for a large segment of the liquid-detergent market. (Meanwhile, glass has apparently run away with the heavy-duty liquid detergents.) An important question is whether polyethylene-bottle capacity will be sufficient to meet demand. Detergent demand may jump in volume to 400-million units in a year or two —almost double the present production capacity for all types of plastic bottles (2).

If container shortages do materialize, will this impel the packager to invest in the new in-plant blow-molding equipment being developed? And this in turn raises the question of whether individual packagers can acquire the considerable know-how needed for successful and economical in-plant production of plastic bottles. Part of the chain reaction that high-density polyethylene bottles are about to set off will affect products other than detergents and containers other than bottles. Dry detergents and the folding carton are certainly more than innocent bystanders in what lies ahead. Historically, established packages have been forced to be improved by the challenge of new containers to the benefit of both the retailer and the consumer.

IN THE FUTURE

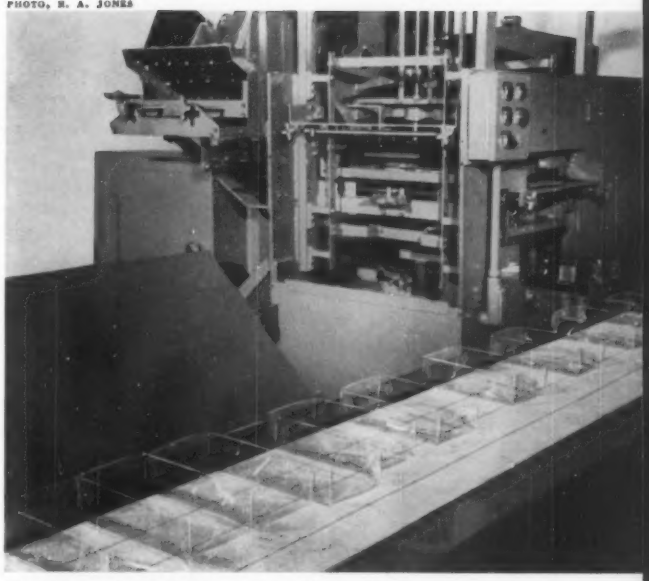
Today, aluminum challenges tinplate. Plastics challenge established materials right across the board—from paperboard on up. And where they can't lick the new materials, many old ones combine with them and advance together.

Cartons

Trends in the design and construction of folding cartons promise far-reaching advances, particularly in the distribution of frozen foods, baby foods and any number of semi-liquid and liquid products. During the past year, such developments as high-frequency sealing, improved high-barrier-carton constructions and carton-pouch systems reflected the demand for better performance and economy.

The carton field, anticipating tomorrow's merchandising needs, appears to be headed in the direction of a single-wall structure that will eliminate both overwraps and inner liners, and permit line speeds of from 300 to 400 units a minute or higher. Also, pouches permitting heat-and-serve convenience are sure to be increasingly important in carton packaging systems (3).

PHOTO, R. A. JONES



The rise of plastics *is inexorably pushed by divergent price trends—plastics downward, older materials upward. The shape of things to come may be seen in trays and cartons cold formed from polystyrene sheet at a cost competitive with paper.*

Flexible pouches and wraps

Flexible packages, of course, have great potential for packaging-merchandising acceptance and may bid for large segments of such product fields as prepared foods, soluble coffee, household items (like liquid bleach) and even motor oil.

During the year just ended, General Foods introduced frozen instant baby foods in foil-laminated pouches (4). Earlier, East Coast Marketers developed a boilable paper pouch for individual restaurant portions of vegetables. Such applications deserve the closest kind of study. They have a turning-point potential for large segments of the food field.

Packaging solutions to the problem of providing convenience are not simple, but there is an almost irresistible demand for packages that reduce the work of menu planning, food preparation and clean-up—what we call "built-in maid service." That is why so many companies are now engaged in programs—both immediate and long range—to develop packages that will take the work out of a product.

eliminate waste and be economical enough to compete with currently popular packages.

Advances in laminations and coatings as well as in base materials give the perceptive packaging engineer more sophisticated opportunities for using flexible packages. Transparent tetrahedron film packets introduced on the West Coast last year and a new laminated paper, foil and polyethylene tetrahedron for sterile milk (5) are good examples of the new approaches to be found in this field. Another promising application of flexible packages is the bagging in polyethylene of free-flow frozen fruits and vegetables (6). The use of these bags in sizes up to 5 lbs. would appear to be big for 1960 because of stepped-up volume, economy, ease of handling and pour-and-store convenience.

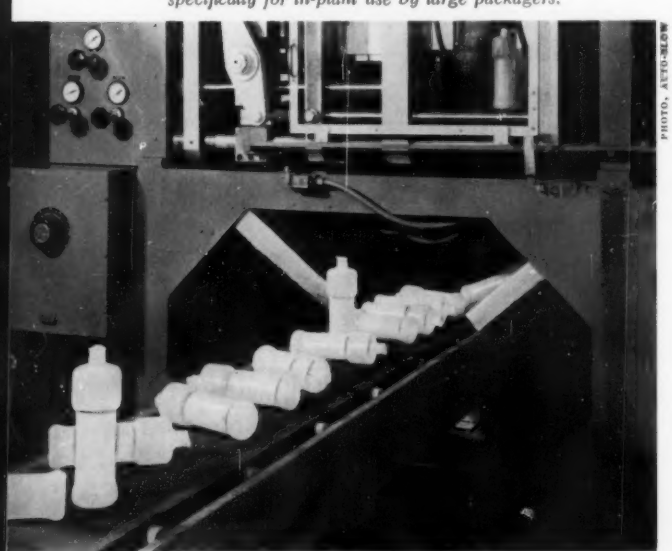
Part of the flexible-packaging challenge is in wrapping and bundling. Successful wrapping of bread in polyethylene film is here and growing—but not without technical problems. The challenge must now be met and solved with the combined know-how of film suppliers and machine manufacturers—as well as the bakers.

The wrapping of paper products and soft goods in polyethylene has already met with considerable acceptance. The next conquests may lie with tobacco products, boxed candy and the like.

Polypropylene

Polypropylene film is soon to be heard from, too. This plastic stands in much the same position for the '60s that polyethylene occupied 10 years ago. Several authorities believe polypropylene's success in the new decade may rival that of polyethylene. If so, the effect on packaging will be profound. Polypropylene's stiffness and barrier properties are reported to be better than those of polyethylene and the yield factor is the best for any of the packaging films (7). In cost, the resin and the film are already close to other volume materials, but large-scale production of polypropylene has yet to be achieved.

In-plant production *of many more materials and packages is predicted. Blow-molding machines for plastic bottles are being developed specifically for in-plant use by large packagers.*



PHOTO, AVIS-BLOW

Vinyl

Polyvinyl chloride has long been recognized as a highly promising plastic for film and for formed or drawn sheet packages. Partly because of the faster, easier progress of other plastics, vinyl has had limited growth in packaging. A new surge of interest now appears to be developing. European packagers are obtaining excellent results with drawn and formed vinyl containers. New vinyl tubes are now being offered here. Vinyl is being newly used for bundling (8) and for stretched-film card packs, and functional as well as economic advantages are reported. An ultra-modern plant for producing vinyl film has recently gone on stream. Other vinyl producers apparently have important gains to offer packagers in the near future.

The principal drawback for vinyl, perhaps, is the fact that it generally offers no particular cost advantages over other materials. However, advanced usage based on improved engineering is turning up a great many instances where vinyl packages are cost savers and excellent performers.

Other plastics and paper

Definite gains have been made recently in the use of polystyrene film, particularly in the heat sealing of this low-cost sparkling film as an overwrap for meats and produce. Isotropic (multistretch) glassine and greaseproof papers are now ready for commercial introduction. Still under development is a hot-melt, thermoplastic coating for frozen meats designed to provide a clear, transparent and tough, but peelable, skin-tight package.

A major food packager will probably shift one of his larger product lines from shipping cartons to bundling in paper during the coming year. Development work in the area of paper bundling has been under way for some time.

Stretchable paper as well as some of the newer-type coated papers bear investigation for bundling applications because of the gain in performance that may be within reach (9).

Stretchable kraft paper also will definitely be employed as a linerboard lamination for shipping cartons, with a gain in performance anticipated from greater strength, particularly in scored and

folded areas of the carton. Stretchable kraft paper is already a big factor in the bag field.

Metalized papers and films

The vacuum-deposit method of producing an ultra-thin silver, gold or other metallic finish on papers and films is a development that promises a number of advantages, principally decorative. In certain instances, particularly with films, improved barrier properties may also be achieved.

Metalized paper is being used for ice-cream-bar wraps, can labels, candy-bar wraps and bakery-tray liners. Potential uses include laminated wrappers and overwraps for frozen-food cartons as well as for many types of applications in display, gift and decorative packaging. Savings resulting from use of metalized papers (9) are potentially promising.

Pouch papers, while not new by any means, are coming in for increasing attention because uses are growing and improving at a significant rate. Polyethylene-coated board is now accepted as an efficient stock for milk cartons (10). Paper and paperboards continue to open more and more packaging doors to improved handling and merchandising of some of the very largest categories of food products.

Foams

Foam plastics—fabricated, molded and even in flexible sheet form—promise superior protection, weight saving, better display packages and even thermoforming applications. Foamed polyethylene became available last year and now awaits evaluation for applications in packaging. Polystyrene foam, which until a year or two ago was available chiefly in its rigid fabricated form, has rapidly increased its range of types. Certainly two of the most challenging packages to appear during the past year or so have been the molded polystyrene-foam tray used by Johnson & Johnson for baby products and the molded polystyrene-foam shipping package developed for Royal Typewriters (11).

In recent months there has been progress in developing resilient polystyrene padding and extruded foamed sheet. Also the range of colors has been extended for foamed plastics; flocked types have been developed and interesting combinations suggested with honeycomb kraft and paperboard.

Because of the many different structures and properties that foam plastics offer, the beginnings of some very important advances can be foreseen clearly for 1960 and the years ahead.

Thermoforms

The thermoformed package was one of the most significant packaging developments of the '50s. Blister, skin and other formed sheet and film packages have in the 10 years of their existence become a major type of packaging. Now at the start of a new decade, there are at least four promising developments that appear to offer even greater opportunities to the packaging industry:

1. Additional materials such as high-density polyethylene and polypropylene appear destined to enlarge the world of thermoforming.

2. Automatic forming, filling and sealing machines are proving practical.

3. A new stretched vinyl-film card package has been introduced (12).

4. A new cold-forming method for making transparent "folding cartons" or trays has just been announced (13). Oriented polystyrene and other plastic sheets are formed by the new machine.

It is likely that some of the most significant news in the '60s will involve thermoforms for heat-and-serve foods and for sterilized drug or surgical supplies. Thermoforms lend themselves to easy loading and closing, and many users are discovering labor

PHOTO, CARGO PACKERS



New refinements *in packaging procedures bring pharmaceutical methods to precision industrial parts. Here bearings are blister packed under sterile conditions commonly used for packaging drugs.*

savings that add to the economy of the pack. This type of package is particularly adaptable for the small-run packager in these product fields.

Molded plastics

The high-density polyethylene bottle overshadows all other developments in the field of molded plastic containers. The first big impact is on detergents. However, the high-density bottle in one-gallon and larger sizes for industrial-type applications (14) is interesting because of economies.

The user or potential user of plastic bottles is fortunate because of the considerable progress made in developing equipment to handle bottles—and further advances in bottle filling and labeling will soon be announced. Today, if you want to run polyethylene bottles, machinery is not a limiting factor—and you can print your own with the multicolor heat-transfer method (15).

From Europe are coming some interesting examples of blow-molded polyethylene tubes as well as vinyl cans and butyrate bottles. Such containers indicate there are rewarding areas of design and construction for packagers in this country. Also important is the availability of new blow-molding equipment. This equipment is now being used with excellent results by producers of toys and other nonpackaging items. Success in blow molding of these products certainly will have its effect on packaging.[3]

Spotlight on cans

The 150th anniversary celebration this year of the metal can (see p. 92, this issue) will focus attention on the vast size and progress of the can-manufacturing industry. Outstanding for the years ahead is the growing importance of the use of aluminum as a can material.

During the 1950s the growth of the aerosol was spectacular—moving from about 40-million units in 1949 to an annual volume—both food and nonfood—of more than 600-million units (mostly in cans) in 1959. Two of the most promising fields—foods and drugs—have experienced slow and sometimes halting growth because of many technical and health-safety complexities. However, 1959 saw important progress made in pressure packaging of many food and drug products.

The aluminum can, of course, is going to be an increasingly useful container for the aerosol.

[3]See "And Now, Blow Molding," *Modern Plastics*, Nov., 1959, p. 83.

New applications *will expand the market for established packages in the new decade. Food and drug aerosols have passed the test stage.*



PHOTO, PRECISION VALVE

Progress in glass

Should the next decade show as much progress as the '50s toward the seemingly contradictory goals of lighter weight with greater strength, the future of the glass container is secure.

In the area of lightweighting, the crowning triumph is the new cone-top, one-way beer bottle, which marks a 25% reduction in weight of this bottle since 1950 (16). The same principle will be applied to glass for other products.

An example of toughened performance by glass containers in all weights and types is the use of the new protective coatings which greatly increase resistance to scratching and breaking (17).

There has been a definite trend by merchandisers of certain food and personal products to employ stylized designs especially shouldered and pinched-waist glass bottles.

Now, epoxy color coatings for glass are on the way. If successful, this development could be one of the most important advances of recent years—a new chance to use glass in a variety of colors without the enormous cost of special furnace runs.

Shipping containers

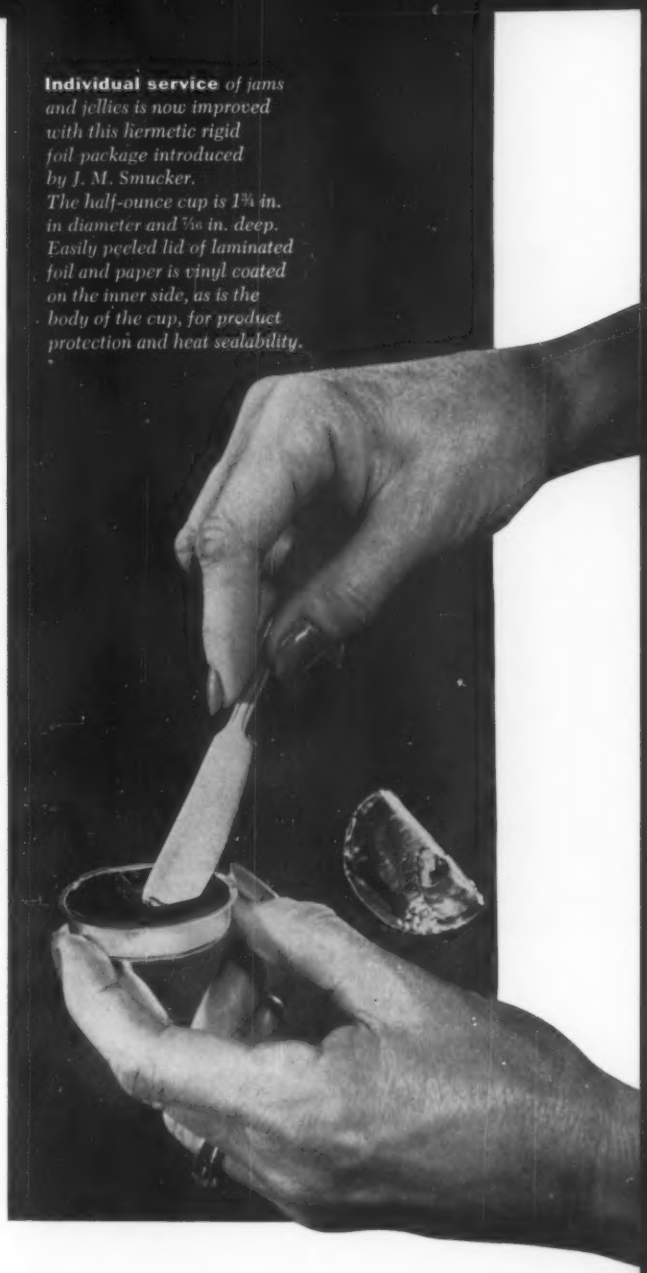
All segments of the packaging field benefit from progress in improving shipping containers and associated cushioning materials, liners and fastening devices. Because shipping containers are universally used, there is no other area in packaging where advances are more significant and far reaching.

Shipping cartons now boast these advances: improved moistureproof board, polyester-coated board, foam-cored stock and improved printing surfaces.

During the '50s there were many notable construction and equipment trends in the corrugated-carton field: (a) the economical glue-lap construction; (b) tear-strip opening; (c) cost-saving end-opening constructions; (d) many new [*Continued on page 170*]

SINGLE-SERVICE FOIL CUP

For a new line of single-service institutional and retail jams and jellies. J. M. Smucker forms, fills and heat seals rigid foil cups at 200 per minute on in-line equipment adaptable to many food products



Individual service *of jams and jellies is now improved with this hermetic rigid foil package introduced by J. M. Smucker. The half-ounce cup is 1¾ in. in diameter and 7/16 in. deep. Easily peeled lid of laminated foil and paper is vinyl coated on the inner side, as is the body of the cup, for product protection and heat sealability.*

The J. M. Smucker Co.—an old-line name in high-quality jams and jellies—has made a modern jump to single-service institutional and retail packs of its toothsome products with a new and economical smooth-wall aluminum foil cup that assures hermetic product protection, yet can be formed, filled and sealed on high-speed, in-plant machinery.

In its smooth-wall form, this is one of the first examples of a new forming technique which will undoubtedly be seen later in larger foil containers.

The round, vinyl-coated cups are heat sealed with a peelable lid made of a foil-paper lamination, equipped with an extended tab for opening. This makes them, it is said, equal in shelf life and barrier qualities to conventional glass jars. The hermetic-sealing innovation is said to open up a potential market of more than 5 billion units for single-service products that are sensitive to light, water and atmosphere. These range from ketchup, mustard and salad dressing to baby foods and soluble coffee and tea.

The prediction of giant volume is based on a detailed market study made by the machine supplier prior to development of the new equipment. The study, of course, also took into account the advantageous properties of the new package. The aluminum cup and its heat seal are impervious to moisture or gas transmission, yet the lid is easily peeled open for use. The opaque nature of the foil also protects sensitive comminuted products from

Synchronized line *for forming, filling and sealing the unit cups comprises roll-foil feed and drawing operation (right) and rotary filling and sealing components (left). Refrigerated cooler (center background) reduces heat of filled packages to room temperature. Note drawing and trimming dies (vertical mechanisms, center) that stamp cups from roll foil.*



Institutional trade *is served by tear-tape cases holding 200 jam or jelly cups nested in molded-pulp trays. Foil cups provide an impenetrable barrier to light, moisture and gas transmission. Tab extending from round lid is quickly grasped for easy opening.*

light deterioration. A packaging speed of more than 200 cups per minute—which may soon be increased to 400 per minute—is said to put the operation on an economical basis.

At its Orrville, O., plant, Smucker is packaging seven varieties of jams and jellies in half-ounce cups at present, with several more flavors to come. Now in distribution is an institutional pack comprising a tear-tape-opening corrugated shipper that contains 200 of the individual foil cups nested in molded-pulp trays, 20 cups to each tray. Now in one test market—and soon to go into national distribution—is a consumer package of the individual servings that has drawn enthusiastic response in its first appearance in the Cleveland area. Here, 15 of the foil cups are enclosed in a windowed folding carton. Containers of ¾-oz. size were used in the test market, but these have been replaced by the ½-oz. size for regular distribution. Each carton contains an assortment of flavors.

The ½-oz. containers are 1¾ in. in diameter and 7/16 in. deep. They are drawn from 4-mil roll stock,

pre-coated by the foil producer with a vinyl that not only affords heat sealability, but also is said to prevent any possible corrosion of the foil by the products. The round lids are pre-formed from 45-lb. paper laminated to 1-mil foil which is also vinyl coated on what becomes the under side. The lids are printed in two colors with a cross-hatched design and product and company identification. They are supplied to the company stacked and ready for the packaging machine.

The packaging machine has several innovations in forming, filling and closing techniques, and comprises three synchronized modular units that have the advantage of packaging flexibility for different types of applications.

In the forming unit, roll-stock foil feeds to twin-die assemblies that blank out the containers and draw two cups at a time in single strokes. Separate dies in the next stage trim the rim flanges to size.

To move the light and easily dented cups, an air blast almost "floats" the containers from the trimmer to a loading station. An enclosed conveyor concentrates the air flow, with the cups riding on a pair of round rod rails.

For filling and sealing, the cups are transferred to individual pockets set on a chain. The chain passes around large sprocket wheels on both filler and sealer, synchronizing action of the two units.

Before the cups are loaded, the pockets pass through a tunnel where they are heated by rod-type thermal units. This heat is transferred to the aluminum cups by conduction to soften the vinyl coating for subsequent sealing. Prior to filling, the cups are also cleaned in a vacuum tunnel.

The filler is a conventional 36-head, piston-type unit that deposits an exact amount of jam or jelly in each cup. The only modification is that the chain-mounted pockets replace the normal lifters.

The sealer is unusual. Also equipped with 36 heads, this unit carries the lids in 36 magazines, which are mounted at the bottom of the machine at the same level as the incoming cups. Spring-loaded vacuum heads on the upper part of the machine are cammed inward on the rear portion of the cycle over the caps, which are picked up by vacuum. Cammed out over the cups, the heads place on the caps and firmly close the cups with a combination of heat and pressure. Vacuum is cut in again at the end of the cycle to lift cups from the pockets and drop them onto an exit conveyor that leads to a cooling tunnel.

In the mechanically refrigerated cooler, both packages and product are quickly reduced to room temperature to prevent overheating. At present, the cups are hand loaded into the molded-pulp shipping trays, which are then stacked into the tear-tape cartons. Further automatic equipment may be added at this point when higher line speeds are reached.

Automatic interlocks and electric eyes are installed at critical machine junctions to shut off machine action if the supply of cups from the former is interrupted, or if a cup is missing under a filler spout.

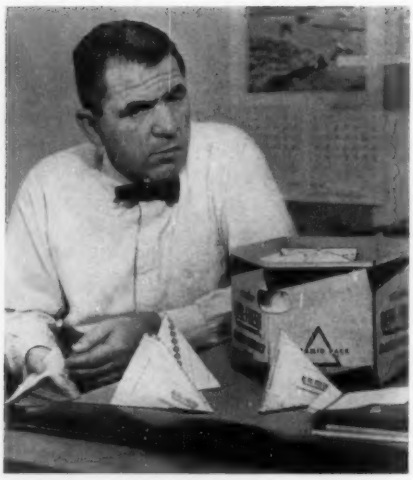
The present machine is designed to handle cups of two diameters, but can accommodate various depths—thus enabling cups to be run with capacities of from ¼ to 1 oz. However, with change parts, the range of this line is further increased to accommodate 2-oz. cups. The modular arrangement of former, filler and capper permits one or more units to be switched to accommodate different types of products. For example, without extensive engineering, a filler for dry products could be inserted in place of the liquid filler to handle products of a powdered or granular nature.

Flexibility and high speed of the operation will interest many packagers with long distribution cycles who need a high-barrier unit container to protect sensitive food products.

SUPPLIES AND SERVICES: Packaging line by United Shoe Machinery Corp., Boston, incorporating a filler by Pfaudler Co., Rochester 3, N. Y. Roll aluminum by Aluminum Co. of America, Pittsburgh 19. Caps by Continental Can's Flexible Packaging Div., Mt. Vernon, O. Trays by Keyes Fibre Co., Waterville, Me. Cases by Packaging Corp. of America, Chicago 39.

Proposed consumer package *for cups, now in a test market, has 15 single-service containers in a windowed folding carton. Carrying an assortment of flavors, this package has drawn enthusiastic comment from consumers.*





Authority *on aseptic filling technique, Robert J. Graves, president of Real-Fresh, Inc., adapted to the production line his father's basic research in sterile packaging of liquids in paper containers. Result is new tetrahedral package for whole milk (below).*

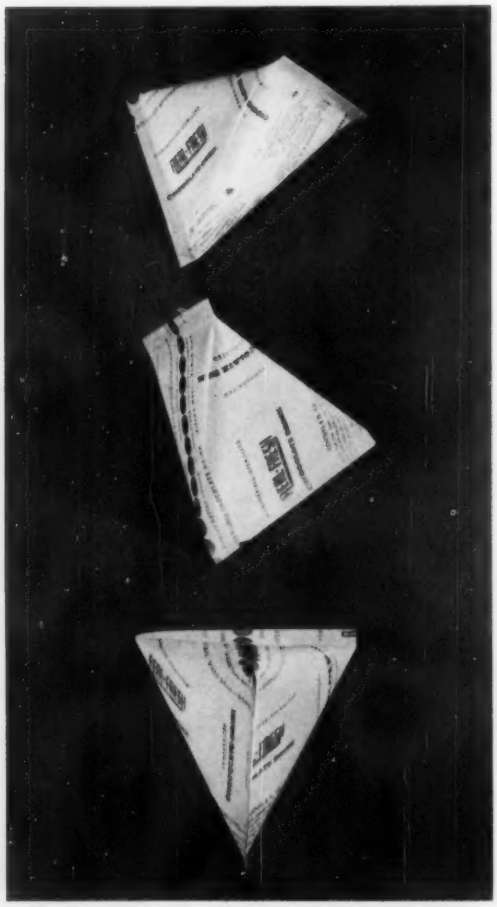
STERILE MILK IN PAPER

Whole milk that keeps indefinitely without refrigeration is now being marketed in tetrahedral-shaped paper containers which outwardly appear no different from those for refrigerated fresh milk.

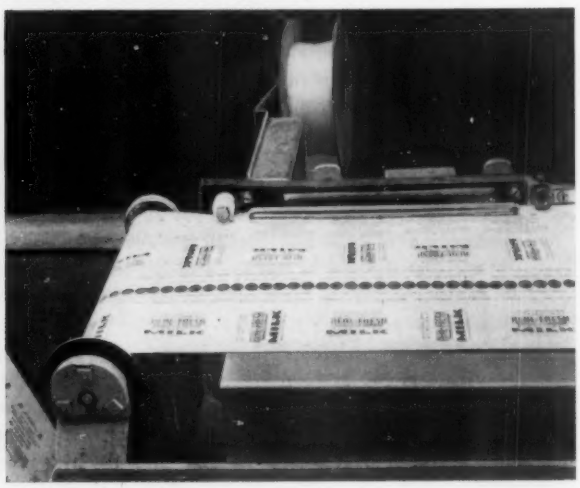
The secret lies in aseptic methods which completely eliminate bacterial activity both in the milk and in the container. Previously, this could be done only with sterile, vacuum-packed metal cans. Duplicating this protection with a low-cost paper structure using an economical, continuous, form-fill-seal machine is an achievement of great significance for all products which previously have required refrigeration for preservation. Application of the method to sterile drug packaging is entirely possible.

Five new features are key elements in the packaging technique, adopted by Real-Fresh, Inc., Visalia, Calif., and used for several milk and cream products and Bireley's non-carbonated soft drinks.

1. Foil, surrounded by polyethylene, is used in the pyramid-shaped packages in such a way as to provide an absolute barrier. The 1-mil foil is



Polyethylene tape, *heat sealed to one edge of the paper web, later reinforces the longitudinal seam in the package to give added strength and prevent wicking.*



New possibilities in long-term preservation without refrigeration are offered to many products by economical process that puts sterile product in a sterile, air-evacuated package

mounted with a polyethylene extrusion inside a special 90-lb. paper and coated with an additional 2 mils of polyethylene on the inner side. The combination, with effective heat sealing, creates a gas barrier comparable to solid metal.

2. The package web is sterilized, prior to forming and filling, with a spray of chlorine solution. This unusual approach, which reportedly has never before been used for a packaging application, makes the inner surface of the new container bacteria free before the pre-sterilized product is introduced.

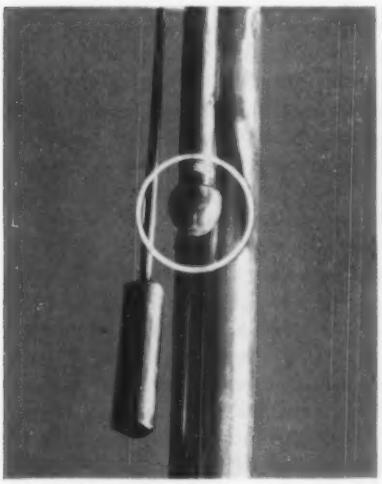
3. Product transfer from sterile lines to sterile package is conducted in a pressurized atmosphere of germ-free nitrogen for utmost protection against recontamination. As the product fills each compartment of the continuous package web, it displaces the nitrogen. Since the compartment is actually overfilled and the cross-wise heat seal of the tubular structure is made through the rising liquid, there is no head space or residual air in the package.

4. Short-burst, high-temperature heat sealing fuses the polyethylene at sealing areas to provide

Sterile packaging *of whole milk in tetrahedral containers involves specially modified standard machine. In basic action, roll-fed web is elevated and formed into a heat-sealed tube. Filled with milk, tube is then closed with two heat seals applied at 90 deg. to each other to form a pyramid shape.*



Inert gas barrier *designed to prevent recontamination during filling employs sterile nitrogen that is introduced into the paper tube through a nozzle (circled in photo below). Nitrogen displaces air above level of milk, which is added through larger tube.*





Polyethylene film shield *encloses entire package-forming and filling area, and contains the inert nitrogen.*



Automatic loading *of completed packages is accomplished by pivoted arms that deposit the pyramidal containers in special hexagonal shippers. Cases rest on rotary plates that turn as each package is added.*

what is believed to be a foolproof hermetic seal.

5. An extra strip of polyethylene film, laminated over the side-seal area of the roll-fed paper lamination prior to packaging, doubles the protection against leakage and increases the ability of the container to withstand rough handling during shipment.

This unusual packaging technique may have far-reaching implications for inexpensive sterile packaging of such liquids and semi-liquids as juices, tomato paste, baby foods, jams and jellies.

Trial shipments of the paper milk packages in half-pint, single-service size have been to Armed Forces and American industrial projects in Alaska, Hawaii, the Philippines and other off-mainland dollar trading areas. And company officials are now considering commercial domestic distribution of this non-refrigerated product. Unlike condensed and evaporated milk, which are heavily concentrated and thus have a certain heat-treated taste, this flash-sterilized milk is said to approximate the flavor of conventional pasteurized milk.

In the high-temperature, short-time (HTST) sterilizing process, bacteria are destroyed, enzymes inactivated and oxygen removed for absolute control of the three causes of product spoilage.

In the decade since the development of aseptic milk preservation, cans have been used exclusively for the packaging of sterile dairy products, since they were the only packages available that would give positively airtight protection.

Costs of filling either a tetrahedron or a metal container are approximately equal. However, when the combined cost of containers, filling and shipping is considered, the tetrahedron package is about half that of the metal can, Real-Fresh officials say.

Basic to the system is a compact Swedish machine that forms a tube from a continuous roll of special paper and produces pyramid-shaped containers, alternately sealed at right angles, top and bottom. It has previously been used for orange juice, milk and ice-cream products in normal refrigerated handling. The machine forms, fills, seals and packs in one completely automatic operation.

A noted dairy scientist, Roy R. Graves, president of the research and patent-holding group, Graves-Stambaugh Corp., Chicago, developed the procedure for sterilizing milk and aseptically filling containers. Graves, who has worked more than a year in solving problems of packaging sterile fluid products in non-breathing paper packages, and his son, Robert J. Graves, president of Real-Fresh, modified the machine and worked out production problems.

From supplier research came the four-ply lamination of paper, aluminum foil and polyethylene (two layers) that has solved the problem of completely protecting the sensitive milk with a package which

is leakproof, odorless and gastight. Exact shelf life of products after shipment is still under investigation, but laboratory samples, when opened after nine months' storage, were in excellent condition.

In the basic machine operation, paper unwinds from a reel and descends into the machine where it is heat sealed in the form of a vertical tube. Horizontally positioned heated jaws then clamp upon the base of the tube, fusing it shut. The container is filled and a second set of heated jaws automatically seal the top at a 90-deg. angle 5 in. above the first seal, forming a leakproof package.

The special foil laminate is thicker than the paper previously used in this package and requires greater heat for positive fusion. Thus, the sealers on the Real-Fresh machine employ an intermittent electric current that creates a high-temperature sealing charge only at the moment of contact with the paper.

To insure against wicking and gas transmission, the reinforcing strip of polyethylene is applied along one edge of the paper as it unwinds from the roll. This covers the exposed paper edge on the inside of the package and provides the extra protection of a double polyethylene coating along the vertical seam made in forming the package.

The inner surface of the package web is next sterilized by the bactericidal spray of chlorine solution, which performs its job as the paper is pulled up to the filling head; excess chlorine is removed from the package by squeeze rollers.

To prevent recontamination of the web and admission of oxygen at the filling point, sterile nitrogen is pumped into the filling column, which is surrounded by a special polyethylene-film hood. A nozzle next to the filling tube sprays the inert, heavier-than-air nitrogen gas into the formed paper tube, evacuating all air. Then milk filling begins. The thick, protective blanket of sterile nitrogen rests on the surface of the rising column of milk.

Milk is piped to the machine after undergoing flash sterilization at 285 deg. F. (for six seconds), high-pressure homogenization and the extraction of oxygen—a process that eliminates all bubbles and foaming. With product bacterial count reduced to zero, all equipment is sterilized with 300 deg. F. water prior to each production run.

Filling continues slightly above the "full" line, at which point the heat-seal jaws close the package, producing a 100%-filled container with no head space and thus no air.

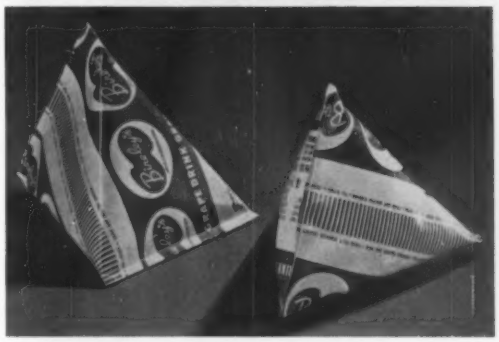
The Bireley's soft drinks, in the same type of container, pass through a similar packaging procedure.

Production speed on this special machine is 4,320 half-pint packages per hour. Completed packages are automatically loaded into special hexagonal corrugated shipping cases that can be palletized for conventional shipment and are constructed to withstand the rigors of export shipping.

Domestic dairy companies, faced with soaring home-delivery costs, are watching this sterile package, because it is apparent that with it they could drop off a week's supply of larger units during one trip. Four deliveries a month instead of the current 15 would achieve substantial savings—which would be augmented by further savings in refrigeration for both dairymen and consumers.

SUPPLIES AND SERVICES: Forming, filling and sealing machine by Tetra Pak Co., Union, N. J. Laminated paper-foil-polyethylene material and hexagonal shippers by Crown Zellerbach Corp., 343 Sansome St., San Francisco 19.





Angular shippers *palletize compactly for warehouse storage (upper photo). Die-cut holes in the cases permit easy handling. Bireley's non-carbonated soft drinks are aseptically packaged in same manner (lower photo) as milk.*

LEDERLE'S

Miniature figurine bottles injection blow-molded of linear polyethylene give promotional push to Lederle pediatric products at a cost little more than that of conventional containers for sampling



Tight seal *on all three containers is assured by internal seal ring, molded inside cap, and by holding screw threads to close tolerances.*



Informative copy *for iron-worker and space-man packages is printed on paperboard cards to which tiny plastic bottles are attached by golden elastic loops. Die-cut collar label around neck of clown bottle gives realistic effect to characteristic ruff and carries essential data printed inside the fold.*

Tiny new character bottles of plastics adopted by Lederle Laboratories, Pearl River, N. Y., to sample medications for children not only provide the added promotional advantages of novelty packaging at very little extra cost, but demonstrate the protective efficiency that can be expected of today's blow-molded, high-density rigid polyethylene containers.

The amusing miniature containers of 12-cc. capacity have been developed for distribution by Lederle's detail men as professional starter-dose samples containing vitamin and antibotic preparations.

As such, the little single-dose bottles, molded in the shapes of a clown, an iron worker and a space man, provide conversation pieces for the Lederle man when he calls on the doctor and appealing gimmicks for the doctor to induce children to take the prescribed medications.

But a gimmick that contains a prescription formula has to be more than a toy. It must measure up to the most exacting specifications to protect the efficacy of the product. And in developing the new character bottles, Lederle, in collaboration with the supplier of the containers, has put the linear polyethylene container to some of the most rigorous laboratory and field tests.

To obtain the desired shapes, the pharmaceutical firm went to a supplier who makes the containers by injection blow-molding process—a technique reportedly more adaptable to the many protrusions involved in producing the figurine shapes. A complete series of laboratory tests had to be run over several months to establish the compatability of the products with the linear polyethylene. Considerable development work and extensive laboratory testing was necessary to effect efficient, tight seals. This was accomplished by designing the cap mold with an internal seal ring or post that provides the primary protection and by maintaining extremely close tolerances between the neck rings of the bottles and the polystyrene screw caps. Container de-

LITTLE MEN



Amusing containers *of 12-cc. capacity molded in the shapes of a clown, an iron worker and a space man, provide conversation pieces for Lederle detail men and appealing gimmicks for the doctor to use to induce children to take prescribed medications.*

sign had to be considered with respect to its suitability for capping, filling and labeling on existing equipment. By careful planning, no production changes had to be made other than different chuck holds to handle the cap shapes.

Finished packages were put through standard vibration, impact and compression tests, both in the laboratory and in actual test shipments to evaluate the efficiency of the containers under varying conditions of transportation.

Colors of the plastics have been carefully selected to harmonize in each case with the colors of the products in the containers.

The project started with the development of the clown bottle for Achromycin V Syrup, which was so well received that it was followed by the iron worker for Incremin with Iron Syrup and the space man for Kynex Syrup.

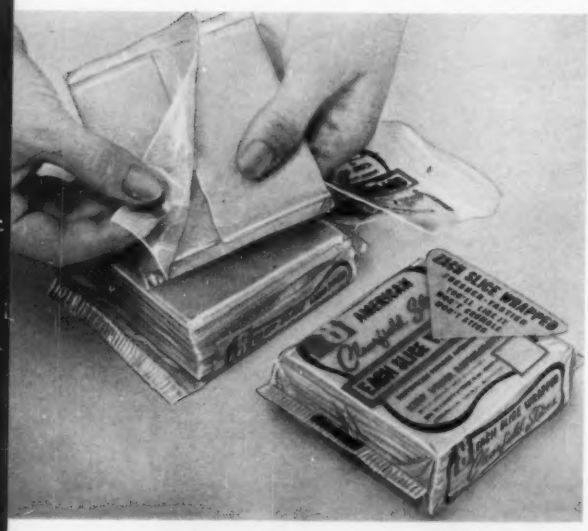
The iron-worker and space-man containers are affixed to paperboard cards, printed with brand, product and formulary information. For the clown, a different labeling idea was used, adding to the decorative effect of the container. All informative copy is printed on a paper fold, die cut in the shape of a ruff that slips around the neck of the bottle like a characteristic clown collar.

Performance of the character bottles has been so satisfactory—and the novelty containers have contributed so much to product sales for such a small additional expenditure over conventional packages, says Lederle—that the company is planning not only to continue their use on present products, but also to introduce new designs for professional sampling of future pediatric items.

Already a fourth design—a bottle in the shape of a miniature racing car—has been selected as a sample-size container for another Lederle product.

SUPPLIES AND SERVICES: Bottles and closures by Wheaton Plastics, Mays Landing, N. J., using Bakelite high-density polyethylene and Union Carbide polystyrene.

Protection of film gives longer life to sliced cheese



Individually film-packaged cheese slices, marketed in units of six or eight in a printed film overwrap, are reported to be achieving "astounding" sales increases for Clearfield Cheese Co., Curwensville, Pa. The individual pouches are 300-gauge polymer-coated cellophane; the overwrap is 450-gauge polymer-coated cellophane.

Moistureproofness of the new film packaging, says the company, not only extends the product's effective shelf life but also makes it practical to store cheese in frozen-food cabinets. User convenience is another major advantage of the individual-slice pouch packaging. It eliminates the nuisance of prying apart stubborn cheese slices. And it guarantees that the unused portion will not dry out after the overwrap has been broken. Packaging is done automatically on the company's own machinery. Cheese slices are spaced in a continuous sleeve of film, which is then heat sealed between the slices and cut into pouches. The stacked pouches are then overwrapped. *Individual pouches formed from Avisco's 300RS2 film. Overwrap formed from Du Pont's 450K203 film, printed by Lustreprint Transparent Films, Buffalo, N. Y., and Whiting-Patterson Co., 4545 Tacony St., Philadelphia.*

IDEAS

Armour shows how meat can be beautiful



The full-color appetizing display plus product protection that can be achieved with a combination of carefully selected materials and printing processes is illustrated by the vacuum-packed pouches for Armour's Genuine Dried Beef. The pouch consists of a three-ply lamination of cellophane-foil-polyethylene on the front and two-ply cellophane-polyethylene on the back. It is supplied to Armour with open end ready for hand filling before being placed on automatic equipment for the vacuum and sealing operations.

Brilliant effect of the full-color illustration, emphasizing "wafer sliced," is accomplished by reverse rotogravure printing on the cellophane surface. Since the pouch is usually displayed face up, the opaque foil ply provides protection against light. The transparent cellophane-polyethylene on the back allows the shopper to view contents. A recipe is flexographic printed on the back in a two-row staggered arrangement interspersed with line drawings of utensils used for preparing it. The pouches are packed in 3-lb. sleeves, eight pouches to the sleeve and three sleeves to the case. *Pouches by Milprint, Inc., Milwaukee 1. Design by Associated Designers, 664 N. Michigan Ave., Chicago 11.*



A famous trademark gets a happy new look

Wm. Underwood Co.'s famed Red Devil—the oldest registered food trademark in the U.S.—has been restyled to project a more favorable image to shoppers. The company's decision to redesign a symbol that had been unchanged for more than 90 years is further proof that even the best-established product can benefit from package modernization. The new trademark, which appears on the packages for all products bearing the Underwood name, is a sprightly, smiling devil. Its predecessor was a menacing conception of Old Nick, complete with cloven hoof and sinister mustache. Before adopting the new "dancing devil" trademark, Underwood conducted a consumer-research program in three major cities. Almost 70% of housewives interviewed preferred the "happy" new symbol to the old one, the packager reports.

According to research findings, shoppers associate the new trademark with a tempting, tasty product, whereas the former symbol was scary looking. *Redesign by Robert G. Neubauer, Inc., Fairfield, Conn.*

IN ACTION

Why back-panel design as elegant as the front?

"Back-of-the-package" four-color display value as great as that of the front face is one of the aims of a carton-redesign program for Scott Paper Co.'s Scotkins paper napkins, featuring pictorial treatment for the first time. This double-face design technique can be adapted by packagers in many fields to give their products improved appeal on today's competition-jammed retail shelves. (See "The Forgotten Side," MODERN PACKAGING, June, 1958, p. 87.)

The front panel of the cartons for both luncheon-size and dinner-size napkins features a photographic reproduction in full color of a napkin on a serving plate. The back of the dinner-size carton is dominated by a four-color photographic illustration of napkins in a dinner setting. On the luncheon-size-carton, back-panel artwork is a napkin superimposed on a color drawing of a girl eating a "problem" food item, such as pizza. In each instance, the Scotkins logo appears, along with brief promotional copy. For carry-over recognition, the colorful polka-dot theme which was the chief design element on Scotkins packages since 1953 is printed on the top and side panels of both cartons. *Redesign by Mel Richman Design Associates, 2009 Chestnut St., Philadelphia 3.*



To all marketers of products that must be tagged, there's a potential for achieving economical four-color appeal in a gang-run production technique by which A. G. Spalding gets

A QUALITY SYMBOL

How can you package a golf club? It has to be open to examination and to trial swinging in the sporting-goods store or pro shop. Yet the maker, like any other packager, wants to tell the story of the qualities of his product in a form that will be firmly attached to the product during the critical period preceding the buying decision.

To A. G. Spalding & Bros., as to companies in many other product fields, a hang tag seemed to be the best packaging bet. But an ordinary hang tag wouldn't do. Because the tag was to be used on the company's premier "Top-Flite" line, it had to bespeak the quality of the clubs, which sell for an average cost of approximately $20 each and are marketed in sets of four or more.

The desired quality could be achieved in a tag folder of heavy, cast-coated paperboard stock, printed by four-color process lithography. But, under ordinary circumstances for a limited-volume product, the cost for a necessarily small run of such tags would be excessive.

Spalding found its solution in a four-color-process printing technique recently adapted to tag manufacture by a leading tag supplier, in which orders of this nature from several companies are ganged up in printing and production. From such a gang run, Spalding received 6,000 four-color tags—folded, strung and ready for hanging. Result: The projected cost to Spalding ($16 per thousand on a 50,000-tag order) comes down to less than half the estimate ($35 per thousand) for an individual run.

Spalding's opinion of the effectiveness of four-color tags in promoting sales at the point-of-purchase is indicated by the fact that it plans to use them again on its entire 1961 line of registered golf-club sets. The packager is now designing new tags to go with the various registered sets it produces. The actual number of tags that will be used is restricted information, but volume will total many thousands.

Although ganging of orders is standard practice in many types of tag and label printing, the application in which Spalding participated is notable both for the technique by which production economies are achieved and for the fact that these economies suggest a vast new potential for applying the appeal of four-color, cast-coated merchandising tags to difficult-to-package products in many fields.

Various steps are involved in paring tag production costs to the bone. The key factors are a four-color-process technique that minimizes the cost of color separation; high-volume, multiple-order production, and standardization of tag stock, sizes, quantities and processing procedures.

In applying the four-color illustration to the front and back covers of the Spalding tag folder, the supplier worked directly from a color transparency furnished by the manufacturer. The supplier reports that advanced techniques have been developed which make possible quantity production of lithographic color separations and plates at comparatively low cost. The cost of color separations and plates for the Spalding tag totaled $60. By conventional methods, the cost would have been more than five times as much, says the company.

Standardization offers an additional economy by spreading basic production costs. In the gang tag run, a 10-pt., one-side-coated stock was used for the tags of all nine participating companies. Moreover, product copy inside all the tag folders was printed in red and blue. High gloss on the tag exterior was achieved by coating it after printing with a scuff-resistant thermosetting polyester. The coating also protects color [*Continued on page 152*]

SUPPLIES AND SERVICES: "Amerchrome" tags by American Tag Co., Belleville, N.J., using Kromekote stock by Champion Paper & Fibre Co., Hamilton, O.

AT HALF THE COST



TIP-ON COURTESY AMERICAN TAG CO.

Luxury look *of cast-coated folder tag, lithographed in four-color process, bespeaks the high quality of Spalding's "Top-Flite" line of registered golf clubs. One tag, strung on a golf club, accompanies each set, so the potential purchaser gets the full product story during the critical decision-making period. Here, famed golfer Mike Turnesa shows clubs to Mrs. Joan Englund, women's club champion, in his pro shop at the Knollwood Country Club, Elmsford, N. Y.*



ALUMINUM CANS: three fabrication types

THE CAN

The brightest new star on the rise as the metal can celebrates its 150th anniversary this year is a "new" material which started its ascendancy at almost the same instant as the can itself. Only now is aluminum—already a brilliant performer in other fields of packaging—coming into orbit with the "tin" can. After a century and a half, this may be the year in which their destinies merge.

In 1810, a French chef, Nicholas Appert, discovered how to preserve foods by applying heat to corked bottles—a Napoleonic prize-winning idea that was put on a lasting commercial basis in the same year by an English inventor, Peter Durand, who patented the construction of the tin can.



Just one year earlier, an eminent British scientist, Sir Humphrey Davy, had discovered a metal that he couldn't separate in pure form, but to which he nevertheless gave the name aluminum.

This year, the worldwide canning industry celebrates its sesquicentennial anniversary on the crest of a wave of progress which has raised can output in the U.S. alone to around 42-billion containers and brought the development of stronger steel alloys, lighter plating techniques, special resin coatings and sealing compounds that have made the metal can a symbol of integrity in product protection.

The stirring history of the tinplate can has recently been reviewed in these pages.[1] Now it's time to consider whether the very nature of the can may change and to what extent and why.

Despite the illustrious performance of tinplate, the can industry last year served notice of its possible independence from the historic material. It proved that it is feasible to package such mass-market products as beer and motor oil, as well as others, in aluminum. The estimated 200-million-plus aluminum cans produced last year represent a mere pinpoint of light in a 42-billion-can sky. Even a doubling of the aluminum-can consumption this year would be small cause for excitement—but the significance goes beyond figures.

Except for the fact that it won't rust and that it weighs less, no one contends that aluminum is a better material for cans than tinplate. It comes down to a matter of cold cost.

[1] See MODERN PACKAGING, *Supplier-Industry Survey*, "The Can," Jan., 1957, p. 102.

LOOKS TO THE FUTURE

The rise of aluminum is the most significant new development as the 'tin can' celebrates its 150th anniversary with a history just one year younger than that of aluminum itself

As has happened with other package materials, the old standby, tinplate—already being produced at the maximum of high-volume efficiency—is being challenged by an upstart which is just beginning to reap the benefits of improved technology for high-volume production at low cost.

Right now, the aluminum can verges on a breakthrough on this basis. In small sizes, in some applications and counting the saving on shipping weight, it has already shown costs lower than those of the tinplate can. The future depends upon the ability of the aluminum industry to hold its upward price curve a shade below that of tinplate. A penny a pound may make the difference.

The greatest restraining influence on tinplate (basically steel) price is the lurking threat of aluminum—a threat which the can industry naturally is not trying to hide. The breakthrough for aluminum, if and when it comes, will not be a sudden sweep. With an average of 1 oz. of aluminum in each can, it would take more than 80% of the present annual U.S. capacity of aluminum—about 2,300,000 tons—to meet the needs of the can industry.

There are technical limitations, too, which at present might restrict aluminum to about 75% of existing can applications. But there is no doubt that the aluminum can is coming on and coming big. Let's stop to consider where it stands today, how it got here and where it's going.

The first appearance of aluminum in rigid cans was in Norway for fish products during the early 1930s. From Scandinavia—where aluminum is basically economical because of the low cost of electrical power—the lightweight containers spread to other European countries, impelled in some cases by a price advantage over tinplate, but in most cases by shortages of steel during World War II. Today, tinplate in Europe holds an edge in price over aluminum, as in the U. S., but in many areas this price margin is so narrow that substantial markets in aluminum cans have been maintained due to the metal's merchandising and technical advantages.

Aluminum for cans did not make its appearance in the U. S. until after the war. Again, fish products were the major items packed. Today, though, other product uses are stealing the spotlight.



Aluminum aerosols *are expected to give major competition in 1960 to standard tinplate pressure containers. Two types currently available are the two-piece cans (left), which are impact extruded upside down from a doughnut-shaped slug, and the single-piece impact-extruded containers (right), formed from a solid disk of aluminum.*

Unlike Europe, where most aluminum cans are made by impact extrusion, U. S. can makers have employed three techniques of can manufacture: (1) a three-piece can, made on conventional can-making equipment, that has a cemented side seam and otherwise differs from tinplate containers only in weight; (2) two-piece drawn or drawn-and-ironed aluminum cans for which one-piece bodies are "punched" from sheet stock by dies and have no side or bottom seams, and (3) two-piece cans with impact-extruded bodies which are formed by subjecting solid or doughnut-shaped aluminum slugs to tremendously high die pressures that cause the molten metal to flow up around the die.

Drawn cans generally can have thinner wall



Easy-opening devices *on aluminum cans could make these premium containers competitive with tinplate, according to experts. Can men are closely studying such devices as this German punch tab and tear seal on an impact-extruded coffee can. A separate polyethylene lid is included for reclosure.*

sections than impact-extruded containers and can be made from high-strength aluminum alloys.

The impact-extrusion and drawing methods are capable of producing unusual shapes not possible in tin cans. When doughnut-shaped slugs are used, the container is formed upside down and requires a separate bottom. This construction is now being used for some aerosol cans. An American-made impact extruder, announced last month, has a reported output of 120 units per minute—double that of existing machinery—and may have a significant effect on the cost of these containers.

The three-piece can has the advantage of being produced on certain existing can-making lines, with only slight modifications in the equipment, but it is reportedly highest in cost. Production experience may boost line speeds to competitive levels.

Economics

Any discussion of aluminum-can applications requires an economic comparison of this metal with tinplate—a comparison that is necessarily complicated because of the different aluminum alloys and the range of weights of tinplate used for cans, the varied methods of aluminum-can manufacture and the changing ratios of wall gauge between aluminum and tinplate in cans of different size.

Here, however, is the simplest approach:

Starting with the basic price of raw materials, aluminum ingot is 24.7 cents per pound today. Based on expectations of volume orders, which would enable continuous operation of rolling mills on standardized stock, the aluminum companies have set "commodity prices" of from 28.5 cents per pound for unalloyed extrusion stock to 37 cents per pound for manganese or magnesium-alloy sheet. This is a virtual subsidy to the can makers, since standard job-shop prices for such sheet exceed 50 cents per pound and big-volume rolling of sheet material—on which the low price is calculated—is barely known in the aluminum industry.

Basic sheet for steel containers runs from a low of 7.9 cents per pound for blackplate to 13.75 cents a pound for the heaviest tin-coated plate used today. The average price, though, for the tinplate used in most can applications is 10.5 cents per pound.

However, since aluminum has a much lower density than steel, a given weight covers more area; three to one is generally accepted as the conversion figure. This ratio reduces the price range of aluminum to from 9.5 to 12.3 cents for an amount *equivalent* to a pound of tinplate.

Thus, on gauge-for-gauge replacement, it can be seen that in theory, impact-extruded aluminum containers are already competitive with tinplate cans.

But there are other significant factors in comparing aluminum and tinplate cans:

In the punching of round can ends, scrap totals 17% to 20%, regardless of material used. Tinplate scrap is worth only about 10% of the purchase price. But aluminum, which is easier to reclaim, is worth about 60% of its initial cost—another plus factor. This fact is worth remembering also for the potential in reclamation of used cans in areas where there is sufficient volume to warrant collection by scrap dealers. Filling-station operators, for instance, must generally pay to have steel cans hauled away. They can, if they want to go to the trouble of flattening and saving empties, make money on used aluminum cans.

An important saving with aluminum is in shipping weight—a factor which varies, of course, with the weight of product contained. Oil producers say that filled quart aluminum cans are 8% lighter than the steel package—a substantial figure that can help offset the high cost of distribution. Percentage weight savings for smaller containers vary with the density of the product and the comparative wall gauges of the containers, but in all cases the lighter aluminum cans cost less to ship.

On the minus side, however, aluminum cans cannot reach the high production speeds, at this time, of standard tin cans. And in general, they must have thicker wall sections to provide the same strength as steel. Thus, at present, it is only in the smaller sizes—where wall thickness can approach that of steel—that aluminum cans are truly competitive.

In a comprehensive study of the economics of the

aluminum vs. the tinplate can, made two years ago by the Arthur D. Little organization,[2] it was found that equivalent raw material of cans made both by impact extrusion and the best deep-drawing process met that of tinplate at about 8 mils wall thickness.

The exception to the price comparison is the aerosol can, which is a premium-priced container and difficult to make even in tinplate. Here, aluminum may well compete in all sizes.

Current applications

The biggest penetration of the aluminum can in the U. S. so far has been its adoption by several major oil companies for quarts of motor oil. Esso acted first in late 1957 with an order for 60 million cans on the basis of a guaranteed reclamation plan put forward by a major aluminum producer. Other oil concerns have followed, without reclamation schemes. Latest estimates from Continental Can Co. indicate the present annual rate of use of aluminum cans for oil is at least 200 million containers, which is a respectable 13⅓% of the total annual consumption of 1½ billion 1-qt. oil cans. The market for aluminum cans should remain strong for at least a year, since the aluminum companies' commodity-price agreements with can makers have been extended to run through to the end of 1960.

Another great potential market for aluminum—now in small volume, but gathering momentum—is in beer cans. This started with an in-plant impact-extrusion operation at Adolph Coors Co., Golden, Colo., that necessitated a scrap-recovery program in order to be economical.[3] Now, 7-oz. aluminum cans made by a drawing and ironing process are being supplied to Gunther Brewing Co., Baltimore, by American Can Co. at the same price as an equivalent steel can.[4] Other breweries are planning similar packaging. No one has yet adopted 12-oz. aluminum cans because such containers, to have the needed strength, would have to be at least 25% thicker in section than a tin can, according to can-making authorities. But numerous sample containers of this size are being tested and several breweries are seriously studying this standard-sized container because of its merchandising advantages. The slightest future divergence of basic aluminum and steel prices will be very significant here.

A sampling of other recent applications of aluminum cans—while not in large volume—shows the range of different product containers to which the use of this metal has now spread.

Sardine fillets have been packed in flat, drawn aluminum cans by Franco Italian Packing Co., Terminal Island, Calif. A three-piece container is now on the market for whole frozen strawberries, packed by Blue Lake Packers, Inc., Salem, Ore. Kraft Foods, Chicago, is using a striking gold-colored drawn can with a friction lid for its Imperial premium-brand cheddar cheese. And Rexall Drug Co., Los Angeles, has launched a line of small, purse-sized aerosol products ranging from perfumes to spray-on antiseptics.

There is no question that an aluminum can possesses sales appeal, customer convenience and certain technical advantages. Marketing men say that consumers have a high regard for the "purity" of aluminum—probably built up through the housewife's experience with kitchen foil. Punch-opening cans, used for beer and oil, are easier to get into when made from aluminum. Technical superiority stems mainly from the elimination of seams, which are the weak points in standard cans. Also, aluminum has slightly better resistance to corrosion by non-acid products than does tinplate.

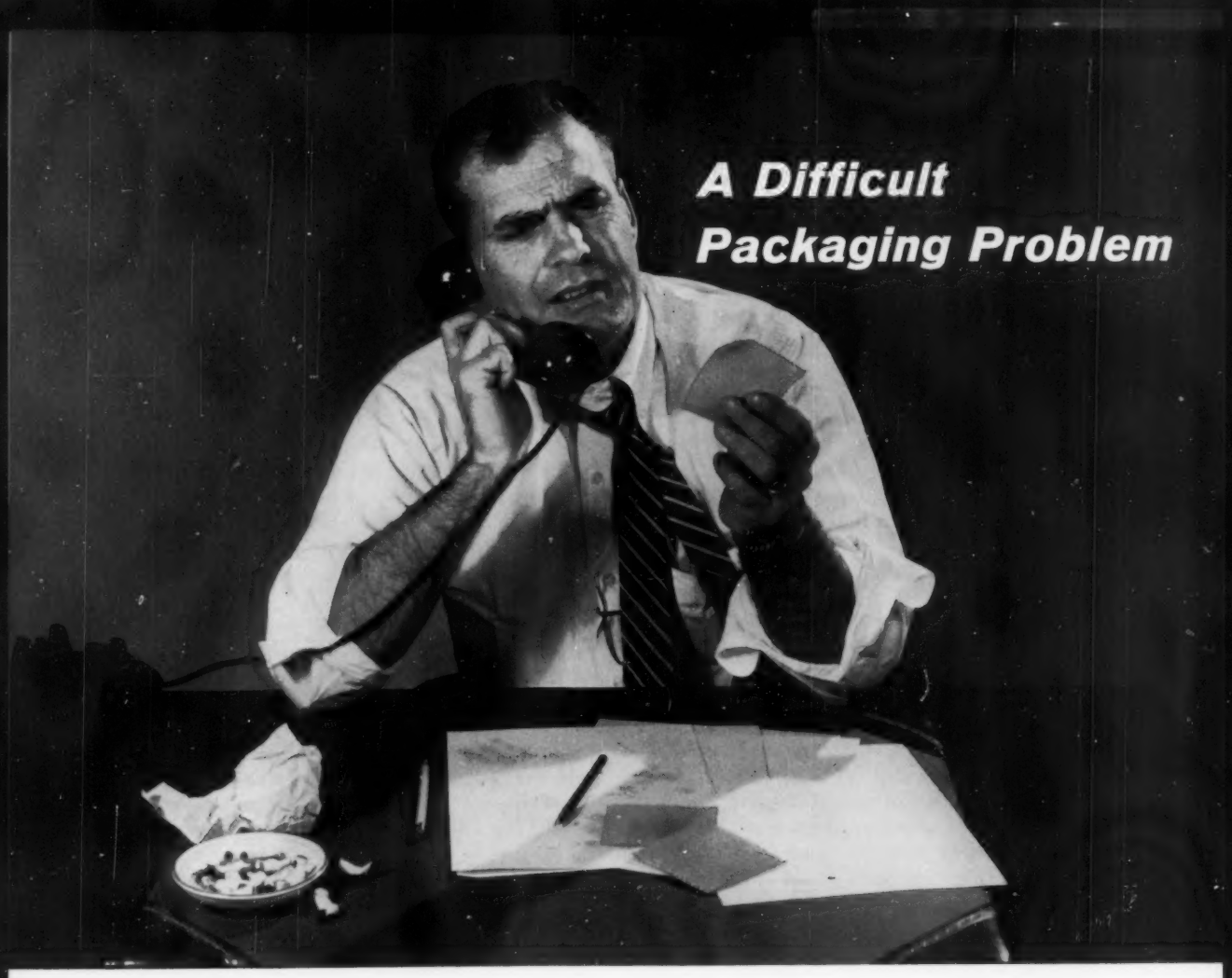
In drawn and impact-extruded aluminum cans, the elimination of side and bottom seams affords two further advantages: (1) lithography can be run all the way around the can with no skips for a soldered side seam and [*Continued on page 165*]

Manufacturing techniques *for aluminum cans are being steadily improved. Here, impact-extruded aerosol cans are given a coat of white base enamel on a rapid roll-on machine, after which they are moved by conveyor through overhead drying ovens.*



PHOTO AMERICAN CAN CO.

[2] See "Aluminum Cans—Prospects and Problems," MODERN PACKAGING, Feb., 1958, p. 98.
[3] See "New Advances in Aluminum-Canned Beer," MODERN PACKAGING, Feb., 1959, p. 90.
[4] See "Aluminum Cans Make a Bold New Bid," MODERN PACKAGING, Oct., 1959, p. 116.



Here it is! . . . The First

The Ludlow line of versatile cast-processed films:

PROPLENE® — Made from polypropylene

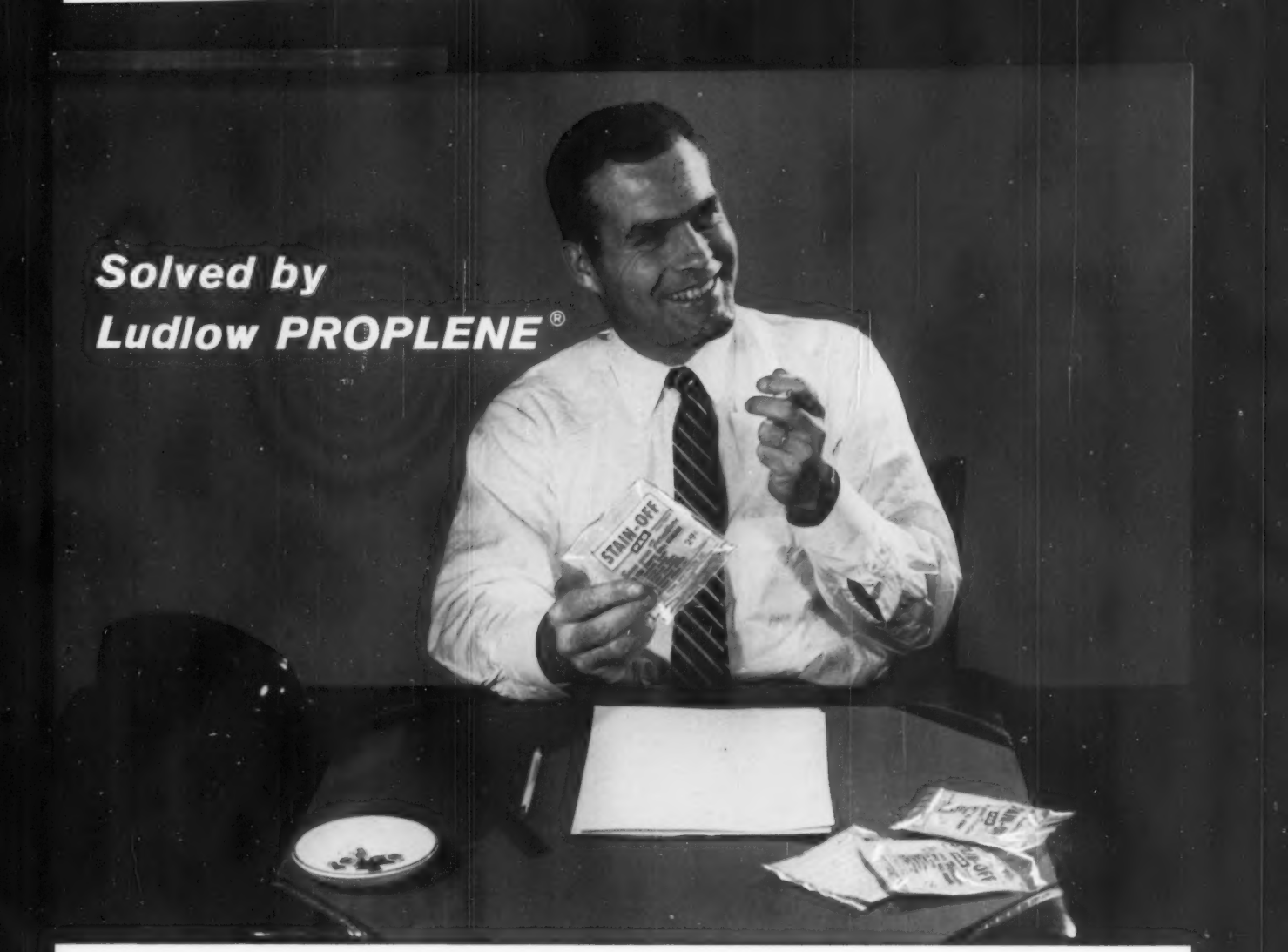
CAPLENE® — Made from nylon-6

ORTHOPLENE® — Type I (low-density) polyethylene

METAPLENE® — Type II (medium-density) polyethylene

PARAPLENE® — Type III (high-density) polyethylene

PLASTIC COATED MATERIALS — Paper, foil, cloth and other films in combination with Ludlow films



Commercial Use of Polypropylene Film

The problem: How do you package an oil-saturated cleaning pad *effectively* (so the oil won't seep through) and *attractively* (so the product is displayed to best advantage, clearly, and with a sharply-printed selling message)?

The manufacturers of STAIN-OFF pads, Home Specialties Co. of Los Angeles, had tried polyethylene packaging, without success. The bags were all right for about one week, then they began to swell, wrinkle and leak.

Ludlow Plastics was called in to help. Ludlow's packaging specialists quickly diagnosed the job as a natural for PROPLENE®, Ludlow's new cast polypropylene film.

PROPLENE met every requirement with ease. It heat sealed effectively and performed as smoothly on bag-making machinery as it does on overwrap equipment. *Problem solved!*

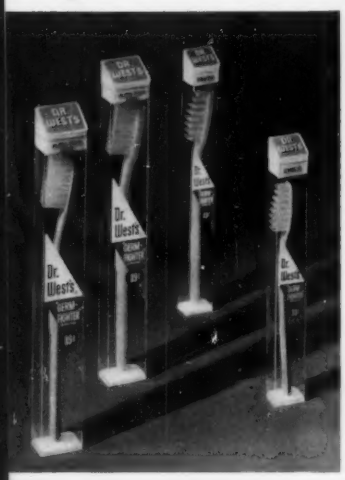
Whether *you* have a problem or not, there's a good chance that one of Ludlow's brilliant cast films can do your packaging job better – and at less cost – than the materials you are now using. Write today for facts and samples. LUDLOW PLASTICS, NEEDHAM HEIGHTS 94, MASSACHUSETTS.

Ludlow

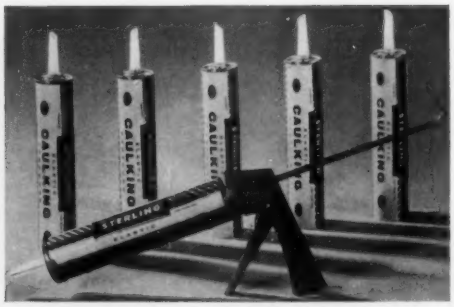
Ludlow Plastics is a division of LUDLOW PAPERS, INC.

PACKAGING PAGEANT

1



2



3



4



5



1 Seamless extruded butyrate containers for Dr. West's toothbrushes have been specially designed and proportioned to achieve unusual rigidity with minimum weight and cross section. The precision-molded closures with unusual sloping top are color coded for quick identity of brush type. Tulox container, Extruded Plastics, Norwalk, Conn., using Eastman Chemical's Tenite II plastic.

2 Laminated aluminum foil overwraps are reported to give added protection, longer shelf life and greater sales appeal to Sterling Quality Products' caulking compound, packaged in spiral-wound paperboard tubes. Foil keeps moisture out, while maintaining the oil level in the product until the cartridge is used in a cradle gun. Foil, Aluminum Co. of America, Pittsburgh.

3 A carton that converts into a toy adds "kid appeal" to Robert A. Johnston Co.'s new Wild West cookies baked in the shape of Indian heads, covered wagons, hunting knives, etc. The carton, simulating a covered wagon, is made of 0.024 white patent-coated solid newsback lithographed in three colors. Printed instructions explain how to punch out one end of the carton and insert a cord or string to convert it into a pull toy. Carton, Diamond National's Gardner Div., Middletown, O.

4 Product freshness is prolonged for Old London Melba Toast by fractional packaging, which Old London Foods has introduced as a result of a consumer-preference study. Individually sealed packages, made of a specially coated glassine, hold seven slices each. Four packages are contained in each carton. Redesigned carton features the legend "Now in 4 fresh-packs" and carries a series of different "shelf talkers" on the back panel. Carton design, Lane-Bender, New York. Carton, Continental Can's Gair Div., New York.

5 An idea for displaying everything from mop sticks to umbrellas is suggested by this stand-up unit for Twirlit batons, made by Suburban Toy & Mfg. Co. A six-sided hollow corrugated column is encircled by two die-cut flanges—a deep one at the bottom and a narrow one at the top. Single batons, with ball ends cellophane wrapped and an instruction sheet attached, fit into matching die-cut holes in the top and bottom flanges. An additional supply is held in the center column. Corrugated display, Stone Container, Chicago.



6



7



8



9



10

6 Evidence of the trend in the cosmetics field toward the graceful, easy-grip "pinch" design for bottles is its use by Jewel Tea Co. for Miracle Lather and Liquid Creme shampoo packages. Despite the marked contrast in size impression (see accompanying photo contrasting old package in the center with the new ones), both containers are 8-oz. size. Bottle and cap, W. Braun Co., Chicago. Ceramic and gold decoration. Glasscrafters, Chicago.

7 Impressive shelf display is achieved by the design of Rival Packing Co.'s new Wagtail dog-food carton. Front, back and side panels are printed in a continuous design so that the cartons may be stacked alternately in any fashion on retail store shelves to reveal the full body of a dog happily enjoying his bowl of Wagtail dog food. Carton, Continental Can's Gair Div., New York.

8 New, pre-measured, water-soluble packets of Lestare dry bleach, introduced in the East by Adell Chemical Co., makers of Lestoil, will soon be marketed nationally. Ten packets, made of methyl cellulose film, are sold in a handy dispenser carton protectively wrapped in a foil-paper-wax lamination. The packet, which dissolves when dropped in a washing machine, holds just enough for one load of clothes. Methocol film and Metalseal carton wrap, Dow Chemical's Dobeckmun Co., Cleveland.

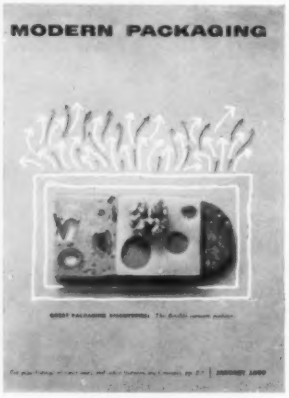
9 Shelf appeal is achieved by Bowman Apple Products Co. with a standard, stock-mold glass bottle and a wrap-around paper label colorfully printed in a sharp, clean design for its new PrunApple, a combination of apple juice and concentrated prune juice, scheduled to go into national distribution soon. A lithographed metal pry-off vacuum cap completes the package. Glass, Anchor Hocking Glass, Lancaster, O. Label, Piedmont Label, Bedford, Va. Cap, White Cap, Chicago.

10 Shipments of Stanback analgesic tablets are reported to have doubled since the Stanback Co. started cellophane bundling multiple packages of the product, which has enabled the opening of new rack-jobber and chain-store accounts. Advantages claimed for bundling are: a smaller, lighter shelf package; reduced freight costs; simplified inventory control; sanitary appearance of the film. Cellophane (450 MST-54), Olin Mathieson's Film Div., New York. Carton, Charlotte Carton, Charlotte, N. C. Design program, Koodin-Lapow, New York.

The flexible vacuum

Invention of a machine and development of films to hold a vacuum or gas created a whole new concept in protective packaging for the self-service age

GREAT PACKAGING DISCOVERIES—11



THIS MONTH'S COVER
DESIGNED BY ROY KUHLMAN

Back in the mid-40s, as America began to contemplate its wonderful post-war world, a packaging prospect of more than usual interest was the idea that foods heretofore requiring vacuum protection in metal or glass could just as well be packaged in vacuumized, heat-sealed, flexible barrier materials.

The development, originally aimed at ground coffee at a time when metal cans and glass jars were still desperately short and based on wartime lessons in flexible-barrier packaging, took several unexpected turns before it was through and ended up in different product fields using materials and machinery quite different from what the inventor had visualized.

But it was the genesis of what we now know as the flexible vacuum package and it led to the further development of flexible gas packaging. Today, this combined field takes an estimated $20 million worth of laminated films per year and the lessons it has taught in effective laminating and sealing have been applied to hundreds of difficult flexible-packaging problems.

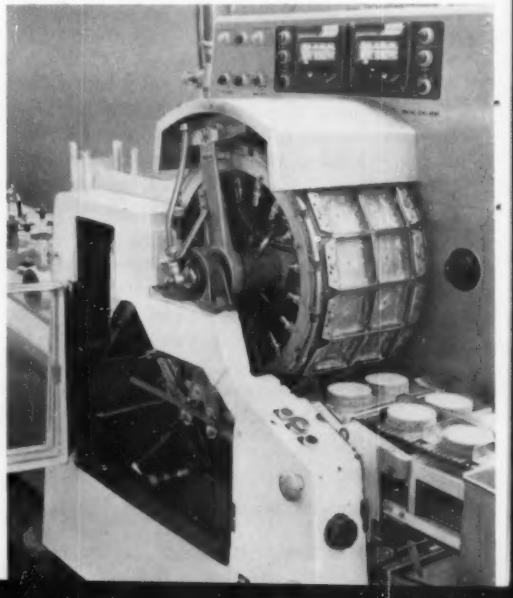
The story of this *Great Packaging Discovery* illustrates the value of persistence in packaging research and certainly points the moral that packagers must watch developments in product fields apparently unrelated to their own. And it shows that great packaging ideas can come from executive ranks as well as from laboratory technicians.

The story leads back to the late '30s, to a garage behind the movieland home of the late Sam H. Berch on Hollywood's Sunset Blvd. Mr. Berch was the president of a major West Coast dairy firm, Arden Farms. A man of great imagination in packaging (he was also the originator of "Diced Cream," individual-serving cartons of ice cream), he had no technical or engineering training and relied on others to carry out his ideas.

Mr. Berch conceived the idea that, with the proper machine, ground coffee could be formed into bricks and heat sealed in a laminated tissue-wax-foil-paper material, using a sort of druggist's fold, while under high vacuum, leaving the contents devoid of oxygen. He estimated that such a package would cost coffee companies 60% less than the key-opening can. Working on his own, he filed patent papers and set a crew of engineers to work to build a prototype machine.

Test packages came to the attention of the Standard Cap & Seal Co., New York (now Standard Packaging Corp.), which in the early '40s bought the machine and patents and set up a research laboratory in a storefront under the old elevated on Manhattan's Third Ave. Hundreds of brick-like packages of coffee, peanuts and other oxygen-susceptible products were produced, stored and tested, using Mr. Berch's original "one-lung" machine. Experimentation moved into other materials, including laminated transparent films, and a new

Latest machine, *as used for sliced luncheon meats, works with two continuous webs of film material, has a production speed of up to 100 packages a minute.*



machine was built. With 16 heads around a revolving turret, it was a thing of gleaming, stainless-steel beauty. Tested by a leading coffee packer, it was a gigantic failure. Try as they might, Standard's engineers could not overcome the problem of coffee being pulled by the vacuum into the seal area, resulting in leaky seals. The big machine was junked. Research moved to Chicago and started on a new tack, eliminating coffee or any product of a granular or dusty nature.

Thinking of other products that might benefit from vacuum protection in the by-then-perfected transparent film materials, Dr. John A. Keenan—then in charge of the project and now president of Standard Packaging—suggested to Armour that they let him try sliced bacon.

With a different machine and a different material—then a lamination of cellophane and Pliofilm—it worked. Armour Bacon, which hit the market early in 1947 in the familiar printed window pouch, was the first flexible package ever to carry the legend: "Vacuum packed."

From bacon, the idea spread quickly to sliced luncheon meats and sliced cheese, both of which gained longer shelf life through exclusion of oxygen from the package.

With cheese, however, it was soon apparent that high vacuum, which drew the film down very tightly around the enclosed product, had the effect of compressing the slices so that they were hard to separate. This problem was solved by introducing inert nitrogen gas into a package after the air was withdrawn in the vacuum chamber.

Now gas packaging is a very important derivative of the discovery. It is widely used not only for cheese, but for other products, such as nut meats, for which a compressed package would not be desirable. And in its own right, nitrogen-gas packaging in film pouches has proved valuable for dozens of unstable products, such as yeast, where the gas atmosphere has a positive preservation function. The flexible vacuum package is used today primarily for sliced bacon, luncheon meats, pickles, smoked fish and Kosher frankfurters.

The twin problems of holding air out and gas in stimulated intensive research in films, laminants and sealing methods, and today the materials used, in various combinations according to product needs, include cellophane, polyethylene, Pliofilm, saran and polyester films.

Semi-automatic machines using prefabricated pouches have been superseded by fully automatic, continuous, flexible-vacuum-packaging machines that can produce 80 to 100 packages per minute. Modifications of the automatic machine are under study for flexible vacuum packaging of increasingly more popular prepared heat-in-the-bag frozen foods. The full ramifications of this *Great Packaging Discovery* are yet to be seen.







Prototype machine *is still used for experimental purposes in Standard Packaging's Clifton, N. J., laboratory. Upper photo, an early test "brick" of peanuts, using foil-paper lamination. Lower photo, the first successful flexible vacuum package for Armour sliced bacon using a printed film pouch.*

A BIG PACKAGING WEEK

Both the Machinery Show and the PI Forum draw record crowds; more than 19,000 at Coliseum glimpse future trends in $3,000,000 worth of equipment on view, while 1,600 attend 11 seminars at the Statler-Hilton

The Machinery Show has once again proved its reason for being. Tackling the big New York Coliseum for the first time in its brief career, the third staging of this specialized show, sponsored by the Packaging Machinery Mfrs. Institute, drew a record 19,853 during its four-day run Nov. 17-20. Meanwhile, a record crowd was also attracted to the well-organized three-day program of the 21st Annual PI Forum, starting a day earlier and 27 blocks downtown at the Hotel Statler-Hilton. Details of the Forum of the Packaging Institute (no relation, but a friendly collaborator with PMMI) will be found starting on p. 105.

At the show, a new high of 159 exhibitors demonstrated more than 4,000 machines for the avid production men and engineers who thronged the booths and aisles. PMMI reports that many prospective exhibitors were turned away for lack of space.

On the two floors of the Coliseum occupied this year by an estimated $3,000,000 worth of machinery, packagers saw evidence of three significant trends:

1. Equipment for handling both plastic film and rigid plastic containers dominates new machinery developments. On display were several notable advances in forming, filling and sealing techniques. Speeds are definitely up on several machines for polyethylene overwrapping and pouch forming.

2. Key developments in standard machinery for performing other packaging functions are being ingeniously engineered for practical increases in both speed and efficiency.

3. There is a sudden spurt in the development of

Third Machinery Show *attracted more than 19,000 packagers to New York City's Coliseum, where exhibit area was crowded with supplier displays.*



machines that integrate several packaging functions —a space-saving feature that is also evident in opening, filling and closing machinery for shipping cases.

News in plastics

A top drawing card at the show was a new machine for cold forming plastic sheet into locking trays. This compact unit operates with pre-cut bioriented polystyrene sheet. No scoring or heat is necessary during the process of bending the 7½- or 10-mil blanks and tightly locking tabs at each corner. The secret is complete containment of the sheet.

No less interesting was the first application of a new sealing bar to a polyethylene overwrapping machine for cigarettes that boosts thermoplastic film wrapping to 150 units per minute. Under development for several years, this new device is made of aluminum impregnated with a molybdenum disulfide compound that eliminates sticking and makes possible a true sliding seal on polyethylene film.

Other packaging machinery for plastics also throws engineering convention out of the window. A new low-cost rotary form, fill and seal machine that molds plastic bubbles in roll sheet at the rate of 300 linear inches a minute makes use of a powerful radiant heating chamber and cylinder-mounted vacuum dies which smoothly and continuously form containers up to 6 in. wide from either acetate butyrate or linear polyethylene.

An unusual and low-cost approach to the problem of obtaining a hermetic seal in a rigid plastic container is a polyethylene cup, formed with an integral tab and ring at the top of the container. A printed film lamination of polyester, saran and polyethylene plastics is heat sealed over the top of the cup with a new heat-sealing machine. To open, the tab is pulled, breaking the top ring away from the cup on a thin mold line. Cost of this unit is said to be only 5% above waxed tubs.

Unscrambling of polyethylene bottles—a notably difficult feat—is conducted with automatic ease and precision by another simple new machine that utilizes previously known cap-sorting techniques to align bottles of either regular or irregular shape.

Polyethylene wrapping and pouch-forming machines were well represented. The newest wrinkle is a choice of automatic attachments to apply header labels on either horizontal or vertical unit packagers. Also interesting are horizontal, vertical and angled pouch packers that enable handling of a tremendous range of free-flowing or bulky products.

Higher pouch-packing speeds in polyethylene were demonstrated on still another new unit packager that has been redesigned with a pneumatic, double-rocker mounting for the heat sealer. Output is boosted to 75 pouches per minute on a single head.

For the small-scale packer—whose production doesn't warrant high-speed integrated machines—there is a versatile new polyethylene bag sealer for use with semi-automatic baggers or with automatic operations. Positioned either horizontally or vertically, depending on the packaging set-up, this unit is constructed with utmost simplicity at low cost to handle a wide range of bag sizes and outputs.

Wrapping and cartoning

Versatility is also the feature of a new carton or set-up-box wrapping machine which automatically adjusts to varying package widths and is quickly set with simple hand-wheel controls for different package lengths and depths. The automatic feature, however, measures each carton with a control plunger that governs the amount of film fed from the roll through a dancer-roll assembly.

In other fields of wrapping and carton sealing, hot-melt adhesives containing polyethylene resins have now been put on a practical application basis

Overflow audience *at Packaging Institute Forum heard keynote luncheon speaker, William C. Stolk, president, American Can Co., tell packaging's progress in 21 years of PI sessions.*





159 exhibitors *at biennial Machinery Show displayed new techniques, efficiency and speeds in packaging equipment. This is one of two exhibit floors at the Coliseum.*

with several new devices. Most original of these is a miniature screw extruder and a new pelletized thermoplastic glue that may have an important influence on wide-scale use of polyethylene-coated paper and paperboard packages and hard-to-seal foils and films. New developments in rope-type thermoplastic glue applicators have resulted in a series of seven new applicators—which utilize the basic principle of a disk impeller in a constricted pump chamber. Prime application of one of these latter units was seen on a machine that forms milk cartons from polyethylene-coated paperboard at 70,000 cartons per hour.

Higher speeds

Other gains in packaging speeds were noted on machines or attachments that: (1) insert leaflets in cartons at better than 400 per minute, (2) wrap odd-shaped candy in either round or rectangular packages at speeds to 160 per minute, (3) fill powders accurately in bottles at more than 200 per minute, (4) apply bottom or top ink codes to cans at speeds from 600 to 1,000 per minute and (5) unscramble, clean, fill and cap quart liquor bottles at better than 200 per minute.

Individual achievements in conventional machines go deeper than speed alone, however: (1) a tube filler and sealer is now equipped to handle all types of plastic tubes, including new vinyl tubes which are just coming on the market; (2) a compact, 5-by-2-ft., semi-automatic cartoner with versatile action that raises hand cartoning to 120 packages per minute; (3) several machines that open or form and fill and seal multi-ply paper bags and so simplify the packaging of dry granular materials and the application of special wire closures, and (4) bottle labeling and capping have been condensed into a single compact machine, eliminating multiple units.

Casing equipment

Equipment for product packages shared the limelight this year—with a wealth of new machines for casing. Development of single machines for sealing a variety of case sizes automatically in random order appears to be a sweeping trend. No less than three suppliers showed new units of this type, which operate on a variety of photo-electric eye, electromechanical and pneumatic mechanisms.

Greatest departure from the conventional in shipper equipment, though, was a new machine that eliminates corrugated shippers altogether. This straight-line unit loads and seals cans, cartons or other packages in a tight-fitting wrap of 130-lb. kraft paper. Full approval from the Interstate Commerce Commission is said to be imminent.

For packagers not ready to make such a radical packaging jump, new machinery was shown for automatic opening, filling and closing of conventional corrugated shipping containers.

In switching to a fall date for the Machinery Show, the sponsors have now achieved the desired every-other-year schedule, with the next show slated for the new Cobo Hall in Detroit, Oct. 31 to Nov. 3,

1961. Also established is the desirability of the $2 registration fee to eliminate curiosity seekers and maintain an attendance of high technical caliber.

PI Forum

The Packaging Institute's Annual Forum returned to New York's Statler-Hilton Hotel after a visit last year to Chicago. This 21st Forum drew between 1,300 and 1,600 packaging specialists, compared with about 1,000 in Chicago last year and 1,500 in New York the year before. There were 1,258 individual registrations this year, but including multiple registrations, 1,632 persons were checked in, representing those who attended more than one day's sessions and those who shared badges with other personnel over the three days.

At the Awards Dinner, PI's third annual Professional Award for individual accomplishment in packaging was presented to Dr. Frank C. Campins, president, Polymer Industries, Inc., a veteran in Packaging Institute activities. This citation is for contributions to packaging technology.

The Institute's 1959 Corporate Award for an outstanding advancement in applied packaging went to Ethicon, Inc., for a surgical suture package involving electron-beam sterilization. This tear-open package is composed of aluminum foil, vinyl plastic and paper, and is impervious to liquids and gases. Howard Zoller, Ethicon's product development division vice president, accepted the award plaque.

The annual citation by PI's Technical Operations Committee for the Forum speaker who contributed the most informative paper of greatest technical value was presented to Dr. John M. Sharf, general manager, Packaging Materials Research, Armstrong Cork Co., who spoke on "Developments in Rigid and Semi-Rigid Containers" at the Packaging Research and Development Seminar.

MODERN PACKAGING continued for the second year its $2,000 Teaching Fellowship award to David L. Olsson, 1958 graduate of Michigan State University's School of Packaging. Lloyd Stouffer, editor, announced this fourth annual fellowship.

The National Starch Products-Packaging Institute Packaging Engineering Scholarship of $500 was awarded to Karl A. Kohler of East Lansing, Mich., Donald D. Pascal, National Starch president, announced. Mr. Kohler is now a student at MSU's School of Packaging.

Special presentations were made to Roger V. Wilson of Continental Can, chairman of the PI Professional Membership and Awards committees, who retired after nine years as an Institute director, and to three other retiring directors: E. P. Whitely, The Dobeckmun Co. Div., The Dow Chemical Co.; William B. Bronander, Jr., Scandia Packaging Machinery Co., and Theodore C. Baker, Container Corp. of America. Mr. Wilson was made an Honorary Member of the Institute, the first such designation by the organization.

Charles Kaufman of National Dairy Products Corp. was re-elected PI president. Vice presidents are L. H. Zahn, Ciba Pharmaceutical Products, Inc., membership; Harold Mosedale, Jr., Package Machinery Co., also treasurer; Dr. L. E. Simerl, Olin Mathieson Chemical Corp., committee activities, and Roy W. Abling, chairman for the 1960 Forum, which will be held Oct. 31-Nov. 2, also at the Statler-Hilton Hotel, New York. Mr. Abling headed this year's Forum. Charles A. Feld was renamed executive director. New directors are Walter C. George, Gaylord Container Corp.; William Didriksen, Ekco-Alcoa Containers; William R. Huguenin, Stokes & Smith Plant, FMC Packaging Machinery Div.; Robert N. Johnson, Cincinnati Mfg. Div., Kroger Co.; Mr. Abling, and Dr. Simerl.

Dr. Mason W. Gross, president, Rutgers University, speaking on "Professionalism in Packaging" at the Awards Dinner, lauded the Institute for "constantly raising higher and higher its level of membership" and offered the cooperation of American universities in reaching its goal of professionalism.

Complete texts of the 56 papers delivered at the 11 seminars will be available on order from the Packaging Institute, 342 Madison Ave., New York 17. Various seminar reports are paired at $5 for each pair. Following are brief reports on each paper, to help readers determine their further interest:

PI Awards cite three packaging leaders



DR. CAMPINS
Polymer Industries
Professional Award

MR. ZOLLER
Ethicon, Inc.
Corporate Award

DR. SHARF
Armstrong Cork Co.
Technical Award

Package marketing special feature

Your Package, Dead or Alive—LEROY M. KING, *vice president, marketing, Food Field Reporter, and editor, Food Topics.* Retailers would appreciate a greater understanding by packagers that the package which lacks certain built-in

attributes to generate its own complete salesmanship in a basically self-service operation can be a serious deterrent to profit. Smart operators, Mr. King said, know that profits are primarily derived from efficient in-store operations, cutting expensive handling and space costs to the bone. So, because the operator sees ever-narrowing margins, spiraling operating costs with smaller net profits, he will subject all packaged merchandise to increasing critical profit analysis.

Keynote luncheon address

Projecting Packaging Progress—WILLIAM C. STOLK, *president, American Can Co.* The toughest competitive era in the history of packaging lies ahead. The fast tempo of packaging progress is apparent from a review of the products represented at this Forum that did not exist even 10 years ago. A packaging revolution has occurred within one business generation. Yet ahead, industry will spend an estimated 10 billion dollars a year for research. This 10-fold increase over 1940 means that the leverage on packaging progress and competition is potentially 10 times as great as at the time of the first Packaging Forum 21 years ago.

Package marketing seminar

Chairman, DELBERT JOHNSON, *manager of advertising and sales promotion, Continental Can Co.*

The Marketing Side of Packaging—PARLIN LILLARD, *vice president, packaging, General Foods Corp.* Our company has just two things to sell: the product and its package. Since most products for sale are good, packaging in our business is, therefore, most important. Last year, for instance, General Foods paid a $97,000,000 packaging bill. Mr. Lillard emphasized that packages must be both seen and heard, explaining that unplanned supermarket purchases have risen from 57.6% in 1945 to 73.3% today.

Planning for Packaging—D. K. SHEARER, *advertising manager, Foods Div., Beechnut-Life Savers.* Stressing the importance of cooperation between marketing and technical packaging personnel in user companies and between user and supplier companies, Mr. Shearer recited a series of stereotyped uncooperative and unproductive attitudes to emphasize the need for communication, particularly through face-to-face contact. He warned against jealousy over "presumed prerogatives" and a lack of common understanding of the interdependence of each group's role in packaging. Their sole objective, he said, should be "to help make and deliver a sale."

Competition winners *were on view throughout the Packaging Institute's three-day Forum. National Paper Box Mfrs. Assn., National Flexible Packaging Assn. and Folding Paper Box of America displayed award winners.*



Coordination in a Large Decentralized Organization—W. K. NEUMAN, *manager, new products, Metal Div., Continental Can Co.* Describing the problem of new products as "very often handled on a mañana basis," Mr. Neuman charted the procedure of his company (a packaging supplier) from establishment of the product concept through specific individual and committee responsibilities to market development. Research, he said, is "probing"; development is "molding to fit a business situation." The speaker stressed four important points in new-product development: sound organization, clear assignment of responsibility, written definition of procedures, careful attention to marketing needs.

The Man on an Island—LEROY D. CONNELL, *merchandise manager, J. Wiss & Sons Co.* Speaking as a "small user," Mr. Connell made the point that his type of company does not have a technical or engineering staff for help and has to rely on suppliers or on past experience. He believes it is time for packaging people to realize that they must provide merchandising help for the small packager and know his problems thoroughly.

When to Bring Your Advertising and Promotion People into the Act—E. GORDON GIBBS, *assistant manager, Traffic Dept., Young & Rubicam.* This speaker stressed the importance of promotional "lead time" because marketing today is such a fast-moving force. Lead time, he said, must be well defined and calculated, and packaging, advertising and sales promotion must be well coordinated because each is dependent on the other. The efforts to all marketing specialists can be summed up in one phrase: "Our job is to get the empties out in the alley." This talk was illustrated by slides.

The Magic of Color in Marketing—O. C. HOLLAND, *director of advertising, Printing Ink Div., Interchemical Corp.* With a lively personal presentation reminiscent of a magician's show, Mr. Holland used lighted and vari-shaped color swatches to dramatize color and show how it can fool the eye, what it can and cannot do, and how it can be used in packaging. Included was this advice: for supermarket packaging, find the kind of light in which your package will be displayed before designing it; the first 20 ft. in a supermarket aren't seen by shoppers because they have just come in from bright sunlight; there is no substitute for black on yellow for legibility and visibility—but every package can't be black on yellow.

Packaging research and development seminar

Chairman, PAUL B. REUMAN, *research supervisor, Continental Baking Co.*

New Concepts of Aluminum in Packaging—DR. M. A. MILLER, *chief, Foil & Packaging Div., Alcoa Research Laboratories, Aluminum Co. of America.* Aluminum foil, as a part of packaging, has found many applications in fields where its "glitter and glamour" have been important aspects of selling. Aluminum foil has functional aspects also, such as impermeability to water vapor and gases. This property has been taken advantage of in packaging. There are other functional properties of aluminum which have not been taken full advantage of up to the present. These are reflectivity, thermal conductivity, electrical conductivity, electrical resistivity in thin cross sections and others. It is predicted that these properties will become of increasing usefulness to packaging.

Developments in Rigid and Semi-Rigid Containers—DR. JOHN M. SHARF, *general manager, packaging materials research, Armstrong Cork Co.* The variety of physical performance characteristics has led to difficulties in commercial evaluation of containers. This is particularly true since no one of the semi-rigid materials will entirely fill the requirements of an ideal packaging material. As a result, the final package must often be recognized as one of limited shelf life, since there can be product changes with time, or the

container itself may show evidence of undesirable change. Therefore, it is advisable to review each of the major evaluation factors that must be applied to both rigid and semi-rigid containers to assure commercial performance. These evaluations, for the greater part, require laboratory investigation under exact or simulated life cycle. The data that result should be carefully interpreted by technologists.

Developments in Paper, Paperboard and Film Packages—WILLARD H. GEHRKE, *manager of process engineering, Marathon, a Div. of American Can Co.* There is a trend today away from overwrapped cartons for the packaging of foods to a non-overwrapped unit package. This has been brought about by: the substantial improvement in the appearance and smoothness of paperboard through the use of trailing blade coaters on paperboard machines; the material improvement in glamour finishes that can be applied to cartons; the design of adequate carton locks that can be threaded on high-speed machinery; the development of machines and techniques for sealing cartons.

Packaging Developments and Trends in the United States—DR. JAMES W. GOFF, *associate professor, School of Packaging, Michigan State University.* Recognizable trends in packaging are concentrated on the development of lighter, more durable materials. There is a need for revision of packaging tests, for improvement of test methods and the development of more modern testing equipment. Many current tests are out of step with the changes that have occurred in developing and using new materials.

Packaging Developments and Trends in Europe—PIERRE J. LOUIS, *Director, French Packaging Institute.* There are two great opportunities for U. S. industries in the European Common Market. The first is for consumer and industrial goods; the second, for the packaging suppliers. Packages will have to be designed on the basis of a careful and complete study of the European market. Competition is being brought to an international level.

Printing seminar

Chairman, ROBERT P. LONG, *editor and publisher, Gravure, Flexography and Packaging U.S.A. Moderators,* JOHN L. KRONENBERG, *S. D. Warren Co.,* and W. W. FITZHUGH, JR., *president, Gravure Technical Assn.*

Spotlighting Latest Developments in Lithography—WALTER J. ASH, *sales manager, Consolidated Lithographing Corp.* In 40 years, lithography has shown a spectacular rise. Its dollar volume in 1920 was $100 million. In 1959 it was $1.4 billion. One reason is that it gives the package designer wide latitude. He can choose from a variety of paper and board stocks, from metals, plastics and other materials and from various art forms. Another reason he cited is lithography's economy. It offers effective, realistic printing details on the least costly papers.

The Phenomenal Growth of Lithography During the Last 20 Years—FREDERICK T. MARSTON, *president, Kaumagraph Co.* In 1939 the life expectancy of a lithographic printing plate was 50,000 impressions. On today's alloy plates, up to 2,000,000 impressions can be made. This is just one indication of the strides made in lithography in the last 20 years. Mechanical improvements in cameras and improvements in photographic techniques also have made their contribution. The results are improved uniformity, better quality, higher color fidelity and elimination of tedious hand retouching—all combing to produce a better product at lower cost.

Lithographing—Pacemaker of the Label Field—LEROY L. GAMSE, *vice president, Gamse Lithographing Co.* Lithography is now the number-one method for printing labels. The volume of lithographed labels has tripled since 1939 and its share of the market has moved up from 40% to almost 60% of all labels produced in the U.S. What are the reasons for this growth? One is the combination of economy and flexibility in the lithographing process, particularly in view of continuing improvements in plate making, printing presses and finishing operations. Another is the realistic beauty of lithography. The importance of realistic, faithful-color vignettes on food-can labels is obvious.

Why Offset Lithography for Folding Cartons?—R. T. MASTON, JR., *vice president, Carton Div., Rochester Folding Box Co., Sub. Weyerhaeuser Co.* Folding cartons have been printed by offset lithography for many years, but the past decade has been the era of greatest growth. The major reason for such growth, summed up in a sentence, is that offset lithography combines versatility, economy and esthetic values not available by other processes.

Progress in Offset Metal Lithography—JAMES L. BURNS, *production manager, American Can Co.* Almost 97% of all metal items decorated today are printed by lithography. Traditionally, four basic products packaged in metal containers—beer, carbonated beverages, coffee and motor oil—are fully decorated by offset lithography. According to industry figures, sales for these four types of containers in the last 10 years have gone up 85%, while total metal-can sales have increased only 47%. Much of the increase in the sales volume of offset-lithoghaphed containers can be attributed to recent extensive research and development work.

Rotogravure for Packaging . . . Paper—HAROLD C. SPERKA, *production manager, Food Packaging Div., Marathon Div., American Can Co.* In addition to better-known advantages, excellent controls are available in: viscosity of inks, electric eyes for continuous printing register, ink filters and magnets to screen out extraneous materials. Mr. Sperka pointed to reliability of color proofing to predict pressroom results; variable spacing to eliminate wrapper waste; outstanding results with metallic inks; varnish or lacquer application without extra operation; instant ink drying for immediate evaluation of finished effect, for perfect trapping, for uninterrupted processing; printing on both sides of the sheet in single pass through the press.

Rotogravure for Packaging . . . Film, Foils and Similar Surfaces—CHRIS SHEPARD, *general superintendent, Downingtown Plant, Milprint.* This was heralded as one of the most complicated subjects in packaging because of constant developments in materials, printing methods, inks. Involved are moisture content, heat, tension, curling, press speeds, odor problems, contamination, etc., and each factor changes from film to film, film to foil, lamination to lamination. The area demands perhaps more research and control than any other and thorough knowledge of chemical problems.

Rotogravure for Packaging . . . Boxboard—J. GIBSON MCILVAIN, JR., *vice president, Downingtown Paper Co.* Feasibility of in-line production contributes to acceptance of gravure for carton production. Cited among in-line advantages were: better ability to inspect finished product, greater ability to find out amount of spoilage, better control between printing and cutting, capital cost offset by ability to control waste. In-line combination is practical, he said, because the printing press controls speed of cutter and creaser. Drying of ink on contact permits containers to travel—an economical advantage.

Rotogravure for Packaging . . . Sheet-Fed Gravure—BEAVEN W. MILLS, *eastern regional sales manager, Robert Gair Div., Continental Can Co.* Economy for short runs was explained, plus the advantage that any size of carton can be accommodated since printing is not tied in with cutting and creasing operations. Several types of presses are available, including four-, three-, and two-color presses. Close register was cited as a benefit of the sheet-fed method; there are no problems of web tension or distribution of the sheet. The process can do anything in printing that the roto

method can do, said Mr. Mills, and handle any length of run if the plates are adaptable.

Addresses were followed by a **Question and Answer Period.** Panel members were: OSCAR SMIEL, *chairman, GTA Technical Committee and vice president, Intaglio Service Corp.;* JAMES H. SMITH, *interplant production engineer, Dobeckmun Co., Div. of Dow Chemical Co.;* HOWARD WILLETTS, *district sales manager, Great Northern Paper Co.;* GEORGE JACQUES, *president, Commercial Ink & Lacquer Co.*

Production Line and Machinery Seminar

Chairmen, A. R. SCHAEFER, *service manager, New Jersey Machine Corp., and* EDWARD M. WIXTED, *manager, industrial engineering, Schering Corp.*

Special Problems Demand "Do-It-Yourself" Techniques—GEORGE M. WOODRUFF, *equipment development service manager, and* CARL HEBEL, *senior product engineer, Maxwell House Div., General Foods Corp.* A slide-illustrated presentation pointed up crash packaging programs at GF's Jello and Maxwell House installations, where normal purchasing routes had to be by-passed in favor of specially modified used equipment or company-built units to form automatic packaging lines for new products in 45 days.

Your Partner—The Machinery Manufacturer—R. Ross KITCHEN, *plant manager, Glenbrook Laboratories Div., Sterling Drug.* Assembly of complete packaging lines from a variety of separately purchased equipment demands utmost cooperation between all machine suppliers and the packager to assure integrated operation and uniform conveyor heights, in-feeds and out-feeds. Detailed specifications are necessary to assure efficient results.

The Consultant's Role in Developing Integrated Packaging Systems—WALTER FRIEDMAN, *senior associate, Dasol Corp.* Typical packaging situations where the help of a consultant may save innumerable dollars of capital investment were cited. Operating studies can range from development of basic packaging concepts to detailed engineering analyses of the production line. Often a consultant can provide a fresh approach to a specific mechanization problem and can also coordinate materials, production and sales approaches to packaging operations.

The Machinery Supplier's Role as a Consultant—WALTER M. YOUNG, *director of sales, Richardson Scale Co.* Basic engineering and in-shop testing techniques in the development of a new bag-packing system for flour were described to underscore the supplier's frequent role as an industrial consultant on special equipment. The installation, comprising two bag weighers and loaders, a special Y-conveyor and a sewing machine, were shown in a movie sequence.

Satisfying Some of the Exacting Demands of Pharmaceutical Labeling—WILLIAM DUNLOP, JR., *manager, Packaging Dept., Wyeth Laboratories.* Advantages of roll labels in assuring accurate identification for sensitive drug products were discussed in all aspects of purchasing, storage, inspection, use and cost. Detailed charts revealed that the break-even point for thermoplastic-label ordering is in quantities of 50,000 or more, where costs are about equal when pre-inspection procedures are taken into account.

Labeling Techniques in the Food Industry—RALPH FLOHR, *plant engineer, Kroger Co.* Labeling speeds of 500 to 1,000 containers per minute were predicted for the near future by the speaker as he detailed the problems of different container sizes and change-over time that face food packers today. Integrated code dating on the labeling machine and greater standardization of container dimensions were called for to clear the way for higher speeds.

A Distiller Looks at Labeling Problems—IRWIN H. SIPHERD, *supervisor, chemical control, National Distillers & Chemical Corp.* Need for less handling to prevent expensive loss of pre-tax-paid products was cited by the speaker as the prime force behind research in labeling adhesives by the liquor industry. Noting several labeling problems traceable to application of the wrong adhesive, Mr. Sipherd traced the formation of PI's Committee on Adhesion to Glass and its work on standard test procedures for adhesives and common labeling problems.

Drug and Pharmaceutical Seminar

Theme: Convenience Packaging—Materials and New Devices

Chairman, R. J. HENNESSY, Lederle Laboratories Div., American Cyanamid Co.; *vice chairman,* O. P. NORRIS, *Winthrop Laboratories, Inc.; moderators,* B. F. MAJOR, *Ortho Pharmaceutical Corp., and* J. A. KOLBAS, *Bristol Laboratories.*

Glass as a Medium for Convenience Packaging—WALTER F. GAVIGAN, *sales manager, Drug & Chemical Container Div., T. C. Wheaton Co.* A hexagonal-shouldered flint glass serum container for quick identification by diabetic patients with failing vision, a gold colored band above the score line on ampoules, two-chambered vials for easy and rapid mixing of injectables, polyethylene snap caps, tamperproof polyethylene closures with tear strips were among the convenience ideas described by Mr. Gavigan and illustrated in a series of color slides. Also included was a run-down of the many decorative effects possible today in drug packaging with black glass, pottery glass, white opal and blue glass and color-applied labeling.

Metals for Containers—N. H. COONAN, *assistant manager, Central Laboratory, Research & Technical Dept., American Can Co.* Rising costs of steel are leading the metal-container industry to study the economy of lighter gauges and the possibility of replacements with other metals—nickel, zinc and aluminum. So far, the first two do not promise to be an important factor. Aluminum is making a strong bid for the future, but its technology is still in its infancy. Aluminum has many advantages as the economics become more favorable. Mr. Coonan discussed the progress that has been made in tin reduction to save costs and to eliminate the dependency on foreign sources of supply.

Plastics for Convenience Packaging—W. B. TIBBETS, *assistant director, Development Dept. Union Carbide Plastics Div., Union Carbide Corp.* Already this year the 1-billion-pound mark in polyethylene production has been reached and 1959, as of this Nov. 17, still has six weeks to go. Plastics have grown rapidly in the field of packaging because, as a class of materials, they provide a broad range of physical and chemical properties and they lend themselves to a variety of fabrication methods. Mr. Tibbets discussed not only the contribution of plastics to convenience packaging from the standpoint of containers, but their almost universal use as coatings, laminates and in combination with older packaging materials.

To Market We Go—Rocket Style—G. H. O'DONNELL, *manager, Pharmaceutical & Proprietary Div., Owens-Illinois Glass Co.* In this space age, packages are missiles launched with convenience as the thrust, said Mr. O'Donnell, illustrating with color slides some of the convenience devices used today on glass packages: scored ampoules; disposable ampoules; no-drip, pour-out finishes; sifter fitments; snap packs; glass humidor cigar packs; roll-on dispensing fitments for deodorants and garlic seasoning, and a new version of this construction; disposable glass beer bottles; re-use decanters; gallon containers with easy grip and handles; pressure packages.

Convenience Packaging—Metals—F. WHITE, *vice president, marketing, J. L. Clark Mfg. Co.* Full-diameter caps make the metal aerosol container more attractive, assure

better stacking, provide a place for price marking on the top. The snap-open metal box has provided a handy pocket package for aspirin, as has a new Bufferin package with formed plastic base that gives better protection to the tablets and is easier to open. The key-opening can for export packaging of Quaker Oats demonstrates a handy reclosable construction. "Disappearing" polyethylene plugs in rectangular cans for liquids are providing convenient pouring spouts. A striking dispensing device is the polyethylene turret seal on the Ronsonol can.

Convenience Packaging—Plastics—R. J. METZLER, *vice president, plastics, Ludlow Paper, Inc.* Despite all the publicity and ballyhoo, plastics have not yet taken over the packaging field. Plastics packaging still represents less than 6% of the total packaging sales dollars. But plastics are spectacular, particularly because of the advances in performance they have made possible when used in combination with other materials. Plastics provide papers that are insect repellent, heat resistant, tarnish resistant and even sterilizable. Mr. Metzler outlined the properties of the most widely used plastics in packaging—cellulose acetate, the vinyls, saran, polyesters, nylon and others. Polypropylene film, he said, shows promise of offering more to people than many other recently developed materials.

Colorimetric Determination of Package O_2 Barrier Effectiveness—L. A. PRELI, *Development Dept., Union Carbide Plastics Co., Div. Union Carbide Corp.* This paper dealt with an explanation of a test procedure developed for measuring the oxygen permeability of filled packages by using a test solution of 0.005M sodium hydroxide, 0.0003 methylene blue and 0.25M glucose. The solution is colorless when no oxygen is present, but turns from light to dark blue as oxygen filters into it through the package. Measurement is by the degree of intensity of the color.

Tuesday luncheon address

Your Package . . . Friend or Foe—MISS MARIE KIEFER, *secretary-manager, National Assn. of Retail Grocers.* Ballooning packages in super-large sizes are not the answer to the increasing space limitations in modern supermarkets, declared Miss Kiefer. Illustrating her speech with slides, she went on to note that extra large cartons and bags, lack of strategically placed price spots, multiplicity of sizes in the single brands and hundreds of deals per week all conspire to complicate in-store handling at less dollar profit.

Industrial Packaging Seminar

Chairman, F. ROBERT CAMPBELL, *manager of packaging operations, National Gypsum Co.*

Packaging and Industrial Management—CHARLES J. ZUSI, *packaging consultant.* To produce the best package at the lowest cost, the function of packaging must be considered on the same level as every other department in the company. It should be guided by an executive responsible to management. All of its aspects—production, warehousing, shipping, materials handling, sales, merchandising, legal and cost—must be considered by the departments handling these activities, either through a committee or through frequent contact with the packaging department.

Extra-Strength Corrugated in Automotive Operations—RALPH A. O'REILLY, JR., *coordinator of divisional packaging projects, General Motors Corp.* General Motors annually spends many millions of dollars on corrugated-board packaging to protect a huge variety of automotive components. Many problems in packaging arise which must be solved economically and effectively. Mr. O'Reilly cited case histories to show how extra-strength corrugated has been applied to achieve a better industrial package.

Multiple Friction-Top Cans—ROBERT BLANK, *director, Can Coatings Laboratory, Sherwin-Williams Co.* Many improvements have been made in multiple friction-top cans, which are used mainly for paints, greases, cleaning compounds and similar items. Among them have been standardization; the development of the reverse-curl ring to minimize rusting and corrosion through contact with the product, and —on bailed cans—the development of clinched ears.

An area now being given attention by manufacturers and users of multiple friction-top cans is that of interior coatings. Before World War II, almost all such containers were uncoated. But when aqueous products—such as water-based latex paints—came into being, it was apparent that effective coatings would have to be developed. Phenolic and epoxy coatings proved generally successful, but they failed in some cases. Now pigmented plastic coatings are being used or tested.

Polyethylene as a Packaging Material—THAD E. SOLDAT, *purchasing supervisor, Solvay Process Div., Allied Chemical Corp.* Mr. Soldat traced the rise of polyethylene as an industrial packaging material. Twenty years ago, Allied used asphalt-laminated bags to package calcium chloride, a chemical product which is spread over icy roads. Though adequate, the bags were costly and tended to become brittle in extreme cold. In 1947, polyethylene-coated-kraft multiwall bags were adopted, which gave greatly improved performance. But the coating methods then in effect kept costs high. A year later the company developed an extrusion coater that did the job much more economically.

Recently, high-density polyethylene has come into greater use in the coating of multiwall bags.

Functional Coating of Paper for Industrial Packaging—DANIEL B. PARKER, *manager, product development, KVP Co.* This is a field in which no real uniformity of mind can be found. There are many coating methods to choose from. No one of them can do a universal job, but experiments have been made toward a universal coater for machine or off-machine coating. The day may come when such a coater will be practical. The limiting factor is human timidity.

Great strides have been made in paper coatings and in coating techniques. Paper is now being coated at speeds greater than 2,200 ft. per minute and a speed of 3,500 ft. per minute is in the immediate future.

Packaging-Materials Industry Hears Purchasing's Side—O. J. BURKLAND, *purchasing agent, Chemicals & Containers Div., E. I. du Pont de Nemours & Co.* The purchasing agent has a unique advantage in that he has a broad view of a company's packaging operation; he is not confined to the responsibilities of an individual department.

In performing his role as a member of the package-development team, the purchasing agent uses a scientific, business-like approach to supplier selection. He has contacts from salesmen of many companies. He knows what your competitors have to offer in price, quality and service. For this reason, supplier representatives must be informed on every new development.

Food Packaging Seminar

Chairman, F. W. SCHREIBER, *section chief, packaging research, Lever Bros. Co.*

Citrus Moves from Wood to Paper—R. B. CLARK, *assistant advertising manager, Sunkist Growers.* The switch from wood crates to corrugated cartons by California citrus growers illustrates what can be accomplished when an industry, competitive within itself, bands together to solve its economic problems. Most impressive step toward the economic survival of California citrus was the decision to scrap a method of packing used for 60 years. Adoption of paper packing is saving growers 39 cents on two half-box cartons for lemons and 13½ cents on oranges, despite expensive investment in new packing equipment. In a few years, the use of corrugated cartons has grown from 5.8 million to 65 million units this year. [*Continued on page 180*]

Tough skin pack reduces costs and damage



OLD

NEW



Recent improvements in skin-packaging materials and methods combine to give Chicago Saws a more protective, more merchandisable self-selection package for Emblem rotary saw blades—at a 20% saving in packaging costs.

The company first packaged this product in a folding carton with a small die-cut opening. Because the carton lacked certain elements of protection and visibility, it was replaced by a hand-filled polyethylene bag, manually stapled to a hang card. It also was a failure, the company explains, by reason of excessive labor costs and because the blade shifted in the bag, often bursting through the film.

All problems have been solved, the packager reports, since adoption of a low-cost, self-selection skin package. The blade is mounted on a printed, uncoated display card. Then the entire unit is automatically skin packaged in vacuumized polyethylene-polyester film. The tough, transparent, 2.5-mil film "skin" immobilizes the blade. Because it is moisture-proof, the packager reports, the film also prevents rust and extends the product's shelf life indefinitely. *P.O.M.V. film by Print-A-Tube Co.; skin-packaging machine by Skin-Pak Machinery Co., both of Paterson, N.J.*

COST

A little ink coverage goes a long, long way



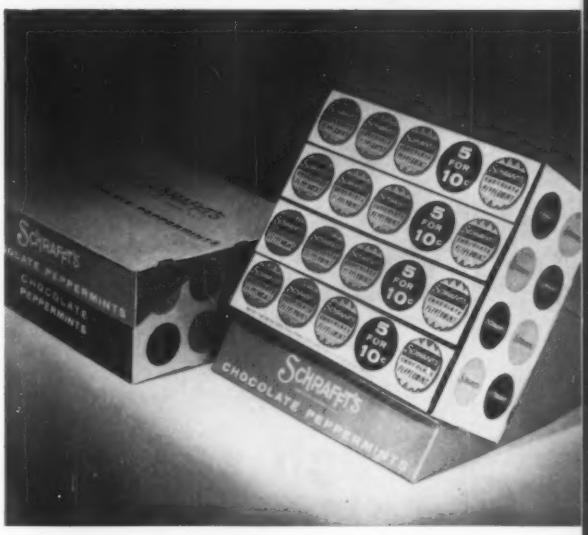
It sometimes happens that simple package adjustment, rather than major overhaul, can lead to important savings in the over-all cost of packaging. Such has been the experience of Southwestern Agrochemical Corp., Chandler, Ariz. The packager reports that the combination of a slight change in surface design and adoption of a lighter-weight sewn closure has trimmed 4% from the cost of 80-lb. multiwall bags for Agrochem fertilizer. Basic bag construction and design have remained unchanged.

On the company's former bag for fertilizer, package-front design totaled more than 45% ink coverage. This amount of coverage necessitated an added charge from the packager's supplier. In bag redesign, the same colors were used, but with more contrasting shades of ink and with less ink coverage. Result: a better-looking package at lower cost. An additional economy was achieved, the company says, via the improved, lighter-weight bag-end closure. In addition to paring the bag's shipping weight, the new sewn closure is said to reduce sewing-line breakage, thus minimizing the incidence of bag damage in handling. *Bag by Union Bag-Camp Paper Corp., 233 Broadway, New York 7.*

Schrafft's takes off the wraps to sell more candy

Bigger unit sales and a 25% reduction in packaging costs are the aims of a repackaging program for Schrafft's chocolate-covered peppermints. In a departure from merchandising tradition, the company is taking these mints out of their individual foil wrappers and putting them into flat folding cartons holding five candies each. Formerly, the wrapped mints were sold loose from dump dispensers. For carry-over recognition, design on the new cartons features reproductions of the confections as they appeared with foil wrappers. (Schrafft's will continue to use individual wrappers until automatic cartoning machinery is installed.)

Point-of-purchase merchandising costs have been minimized, the packager says, by adoption of a 24-carton shipping container that converts into a counter-display stand. The sides of the shipper's cover are die cut in a V shape. When the cover is removed and folded in along a score line, it becomes a flat-bottomed, inclined stand that supports the tray section for angled display of the cartons of mints. Tab-and-slot construction adds rigidity to the merchandising unit. *Design by Eron & Eron, Englewood, N.J. Cartons by Continental Folding Paper Box Co., Ridgefield, N.J.*



CUTTERS

Peelable kraft tear tape cuts costs 35%

Revived packager interest in tear-strip-opening shipping containers (see "New Zip for Tear Strip," MODERN PACKAGING, April, 1959, p. 178) may get an added boost from a cost-cutting innovation that has been put into effect by Anheuser-Busch, Inc., St. Louis. Here's the story:

Some months ago, this big national brewer adopted an end-loaded, tear-strip-opening, 24-can shipper for Budweiser beer. Although the case represented a 22% economy in containerboard, material-cost savings were largely offset by the need for a fabric-reinforced tear tape that was more costly than conventional manufacturer's-joint tape.

In an attempt to develop a tear tape that would combine effectiveness with maximum economy, N. D. Ellis, manager of Anheuser-Busch's Package Engineering Dept., sat down with representatives of the packager's tape supplier. Out of this meeting came a research project that paid off in a kraft-paper tape whose adhesive is applied to a release agent. According to the brewer, it costs 35% less than fabric tape and also pulls cleanly away from the shipper, thus keeping the case neat looking for retail display. *"Peelac" peelable kraft tape by Nashua Corp., Nashua, N.H.*





Tapered shape *and seamless bottom of this unique polyethylene tube make for easy dispensing of paste hair-coloring rinse without danger of leaking. Since there is no bottom opening, filling is done through the top.*

Tough seamless tube

It looks and acts like a tube and is filled like a bottle. Cosmair's solution for a problem product is a blow-molded polyethylene container with no bottom opening

Plastic packaging, which has often saved the day for critical product formulations requiring maximum protection, has once again solved a problem, this time involving powerful paste-type hair colorants. The ingenious answer to this problem is a strong, tapered, saran-coated polyethylene tube that is blow molded like a bottle with a closed, seamless bottom. Filled through the top, the tube requires no heat sealing, thus avoiding container failure through product interference in the heat-seal area.

The new container is used by Cosmair, Inc., Clark, N. J., for eight color rinses that can only be formulated as pastes and must be worked into the customer's hair like shampoo. Containing coal-tar derivatives, the hair preparations are so difficult to contain that they will, reportedly, corrode metal tubes in three weeks. They are too thick and too difficult to dispense from glass jars or bottles. Cosmair is an American subsidiary of the world-wide L'Oreal of Paris hair-dressing house.

The packager's first approach was a conventional 8-oz. polyethylene tube which was bottom filled and then heat sealed, but the slightest bit of product in the seal area caused that tube to fail.

Out of this developed Cosmair's new 6-oz. seamless tube, which is tapered at the bottom like a conventional tube. It is internally lined with a saran-type spray coating and is said to have a shelf life of three years. It is priced, the maker says, to compete with standard polyethylene tubes. Product strike-through is prevented by heavily pigmenting the tubes in a bright blue that also serves as an attractive background for a red and white silk-screened design. The urea cap contains a vinyl-coated pulp liner to prevent corrosion.

The tube's tapered design aids product removal, since there are no internal corners to catch and hold the paste. A tapered polyethylene spout cap, included in the folding-carton overpackage, enables product to be squeezed into the hair.

Filling is semi-automatic, employing the filling head of a standard tube machine. Caps are hand applied to the tubes with the use of a power-driven chuck at a rate of 42 per minute.

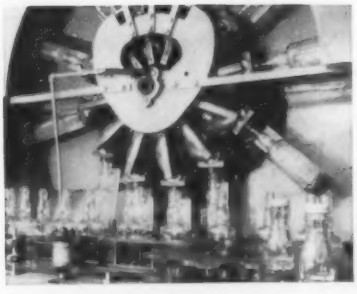
This new seamless tube may find wide application for hard-to-handle semi-liquids. Increased use will logically lead to development of special filling and capping equipment to increase packaging speed.

SUPPLIES AND SERVICES: Lined, decorated tubes and caps by W. Braun Co., 47 W. 34 St., New York 1.











1959 REPORT ON KNOX GLASS

BY A. W. WISHART, PRESIDENT, KNOX GLASS, INC.

The past year for Knox has been the most successful in the company's history. As has been our custom, we wanted to take this method of thanking you—our customers and friends—for your continued confidence in us, and to tell you of the progress Knox has made over the past twelve months.

PLANT AND FACILITIES: Knox was able, during 1959, to continue its trend toward more and improved facilities. The 105,000 square foot plant at Danielson, Conn.—the first modern glass container plant in New England—hit peak production. Knox purchased Buck Glass, in Baltimore, Md.—a truly outstanding plant and organization. And, we have just completed plans for building a new glass container plant in Georgia to better serve our friends and customers in the booming Southeastern United States.

SALES: Knox's shipments of glass containers, in both quantity and dollar volume, hit an all time high in 1959. Net sales were up some 16% over 1958. In addition to this being pleasant news for our stockholders, I am particularly happy at this indication of even greater confidence and satisfaction from our customers.

1960 FORECAST: We can categorically state that our efforts to better serve you with the finest glass containers available will continue throughout the new year and the years to come.

Continued progress in manufacturing techniques—maintaining our concerted emphasis on quality control.

Better customer service from our 37 sales offices in 20 states.

Additional modern facilities—located even closer to your plants.

All of these are our objectives for the coming year. And they are, of course, backed by a firm desire to prove to you that Knox, while not the biggest, is still your best source of glass containers.

the new / **KNOX GLASS**



DISPOSABLE COOLER
Service-type promotion to sell new beverages, premium brands. Holds cold and melted ice in; easy to carry.



SELL 3-PAK . . . for frozen juices. Merchandise three of a kind or combinations. Makes customers pick up more than one or two.

BUILD BRAND PREFERENCE, PEP UP SALES WITH THESE NEW LOW-COST PACKAGING IDEAS



PARTY SERVICE ICE CREAMS
Novel fold-off carton makes ice cream an attractive "convenience" food, novel enough to command premium price.

SALAD DRESSING MIXER
Easy-to-use disposable mixer to contain three packets of herb mix—calibrated for oil and vinegar.



TAKE YOUR PICK! Here are four new packaging ideas created to perk up sales, make shoppers reach for your brand first. They are typical of novel, sales-appealing merchandisers that can be made now from available stocks of low-cost liquid-resistant paper and paperboard. If you're interested in one or more of them, see your regular paper products supplier. He can obtain the liquid-resistant paperboard from leading paper mills who size their stocks with Monsanto **MERSIZE.®**

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WORKING ON YOUR OWN NEW PACKAGING IDEA? Don't overlook liquid-resistant paper and paperboard. For further details on the above paperboard applications—request a copy of **DESIGN GUIDE FOR NEW PAPER PRODUCTS.** Write on your company letterhead to:

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Machinability of polyethylene film

Studies pinpoint factors which contribute to successful overwrapping both on a machine designed for polyethylene and one converted from a cellophane operation. *By William P. Gideon**

During the past year there has been increasing interest in the use of polyethylene film as a material for automatic machine wrapping. In reviewing the articles written on this subject, one finds a wealth of information. The information regarding the resin used is mostly theoretical, while that about the actual overwrapping is very general. This article will be more specific and deal primarily with some practical aspects of overwrapping with polyethylene film, such as the qualities of the film required, the machine feeding, the folding, the sealing and the opening of the package. The points will be illustrated by describing actual experiences using commercially available film on commercial wrapping machines and tabulating the results.

In selecting the right material for a given application, there are certain characteristics which must be considered. For overwrap, one of the most important features is the customer appeal attained by the wrapped package. This appeal is determined mostly by the clarity, gloss, transparency and feel of the wrap. The wrapping material must provide neat folds and seals, and must be durable and effective in protecting the contents.

After determining that the material makes an appealing and serviceable package, the next step is to investigate the economics of the packaging operation. Numerous articles have been written concerning the cost advantages and protective qualities of polyethylene film. These features, therefore, will be considered outside the scope of this article. The main thing that now needs to be demonstrated is that it is possible to make a neat and serviceable package using polyethylene film in automatic packaging machines and to do it at the commercial speeds associated with cellophane.

*Eastman Chemical Products, Inc., Kingsport, Tenn.

Studies

The first of the two studies to be discussed was made on a Model FA machine manufactured by the Package Machinery Co. This machine is com-

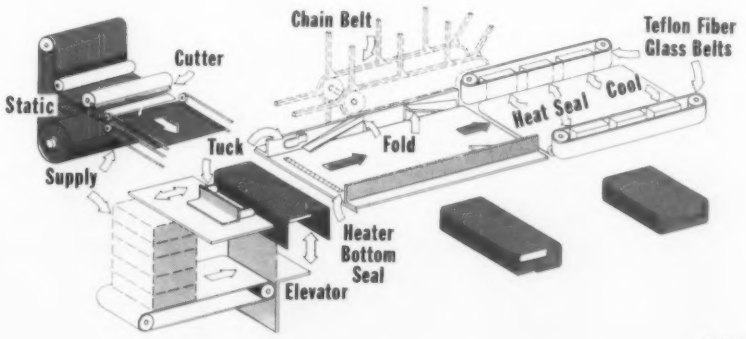


Figure 1. *Schematic of a Package Machinery FA machine designed to overwrap boxes with polyethylene film automatically at 100 a minute.*

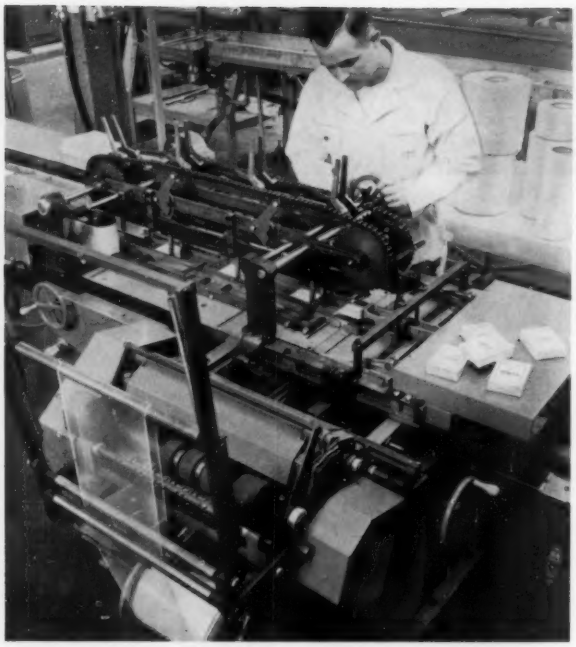


Figure 2. *View of in-take end of FA polyethylene machine. Film feeds from roll at lower left. Two static bars are used, one on each side of cut-off knife. Corrugators between delivery roll and cut-off knife assembly make very slightly and evenly spaced wrinkles in film to increase stiffness in direction of travel.*

mercially available and is designed to use polyethylene film as an overwrap for boxes. A schematic diagram of the machine is shown in Figure 1, and photographs are shown in Figures 2 and 3.

The design features for feeding and folding polyethylene film on this machine are very satisfactory. As can be seen in Figure 1, the film supply is at the left of the machine and the film is cut to length and conveyed through two belt conveyors to the point where the box to be wrapped makes contact with the film. In order to assist in the feeding operation, a set of static-eliminator bars is installed, one on each side of the cut-off knife. Also, to maintain continuous feed, corrugators are placed in the space between the delivery roll and the cut-off knife assembly. The corrugators make very slight and evenly spaced wrinkles in the film, which increase film stiffness in the direction of the wrinkles and tend to eliminate curling.

The package to be wrapped is supplied from below the main platform of the machine and raised to the proper level by means of an elevator. The film is supported by the belt conveyors until it makes contact with the package.

The bottom seal is made by a reciprocating sealer which operates while the package is momentarily stopped in the correct position. This is a reciprocating bar-type sealer and it is quite satisfactory at present machine speeds. However, because of the dwell time involved, it could be a limiting factor at

Table I: Results of overwrapping with various polyolefin films*

Formula	*Resin density*	*Melt index*	*Level of slip additive*	*Treatment*	*Thickness (mils)*	*Machine handling and sealing*	*Appearance of wrapped package*
860	0.923	1.7	None	None	1.2	Unsatisfactory. Difficult to fold. Too soft and tacky	Wrinkles; package not tight enough
X4463-49	0.923	1.7	Low	None	1.2	Could be handled with difficulty	Good
886	0.923	1.7	Medium	None	1.2	Satisfactory	Good
886	0.923	1.7	Medium	Outside treated	1.2	Satisfactory. Occasional folding difficulty	Good
885	0.923	1.7	High	None	1.2	Unsatisfactory. Too slippery, difficult to fold tightly	Poor; very loose package
889	0.929	1.7	None	None	1.2	Satisfactory. Good handling properties	Good; occasional wrinkle
889	0.929	1.7	None	Outside treated	1.2	Satisfactory. Occasional folding difficulty	Good; occasional wrinkle
X4463-9	0.932	1.7	None	None	1.0	Satisfactory	Good; neat seals
X4463-9	0.932	1.7	None	Outside treated	1.0	Satisfactory	Good
1001	0.934	1.7	None	None	1.0	Good	Excellent
1001	0.934	1.7	None	Outside treated	1.0	Satisfactory	Excellent
1002	0.935	7.0	None	None	1.0	Good	Excellent
Polypropylene	0.910		None	None	1.0	Satisfactory. Sealing critical	Fair

*Using Package Machinery FA machine in the Tenite Development Laboratory.

higher machine speeds. After the bottom seal is made, the package is then picked up by the chain-belt conveyor and carried to the tuckers and on to the folders where the end folds of the package are made. The angles on these folders are approximately 10 degrees.

The package is conveyed on past the folders and then picked up by Teflon-coated glass-fibre belts, where the end seals are made. As can be seen from the diagram, the first three sections of this conveyor have heaters behind them. The heat is conveyed through the impregnated glass-fibre belts and the seal is made here by contact between the film and the belt. The last section is cooled and the cooling also is conducted through the belt. Length of the heater section is sufficient to seal even the more-difficult-to-seal materials without causing the sealing temperature to be critical.

All metal parts of the machine which contact the polyethylene film are coated with Teflon. This was considered necessary because hot polyethylene tends to stick to metal parts and would cause unattractive seals and reduced gloss. Other types of lubricants probably could be used.

Table I lists various films tried on this machine. All, except for the one identified as polypropylene, are various types of polyethylene. These different films were test wrapped primarily to determine which would handle and seal best and produce the neatest and most attractive package. All of these films were run at a rate of 60 packages per minute and, except when major difficulty was encountered as noted in the table, they were also run satisfactorily at 100 packages per minute. For all the films tested, except polypropylene, temperatures of 300 deg. F. on the end seals and 375 deg. F. on the side seal were sufficient to make effective seals when running at 60 packages per minute. An increase of approximately 20 deg. F. in the temperatures of both sealers was required to seal the same films at 100 packages per minute. The temperatures were 350 deg. F. and 425 deg. F., respectively, with the polypropylene film.

Table I also shows that the materials most difficult to handle were those containing high percentages of slip additive and those in the lower-density category. The greatest difficulties were encountered with these two categories of materials when they had been processed on chill-roll equipment to obtain maximum clarity and gloss. Such materials did not lend themselves to the production of tight, neat packages because of the lack of friction between the film and the Teflon-coated folders. The low-density materials without any slip additives were relatively limp and were too tacky to be mechanically held, conveyed and folded with sufficient ease after the blank was cut. The low-density films containing a medium amount of slip additive handled more satisfactorily. However, when running these films at 100 packages per minute, there were more "rejects" than would be desirable on a continuous production basis.

The polypropylene film handled and folded without difficulty. With the polypropylene it was possible to make good wraps at 60 packages per minute, but the sealing was more critical. This was probably due to the higher sealing temperatures and sharper melting point of the polypropylene film.

Limited trial runs made with high-density polyethylene were found to present much the same difficulties as were encountered with polypropylene.

In general, the most satisfactory results were obtained with films containing no slip additives and having densities from 0.929 to 0.935. The clarity and gloss of these films are outstanding when extruded by the chill-roll method. Their rigidity appears to be just right for machine handling and they are easy to seal. Also, without any additives, they exhibit the degree of slip required for good feeding and folding. It was also determined that these films could be run satisfactorily even when treated for printing.

Briefly summarizing the results of the study on the FA machine, sustained runs have been made with polyethylene films at wrapping speeds in excess

Figure 3. *Over-all view of FA polyethylene machine from discharge end. Note neatness of wraps achieved with medium-density polyethylene film.*



of 100 packages per minute. From discussions with other manufacturers, it is believed that similar results will be obtained on their machines.

Conversion

Since a large number of the commercial machines now used for automatic machine wrapping were designed for use with cellophane, another study was made to determine what would be necessary to convert one of these commercial machines to handle polyethylene film. For this work, a machine that had been used to overwrap cigarette packages with cellophane was obtained from a tobacco company. This machine, a Package Machinery Co. CMT model, is illustrated schematically in Figure 4 along with the conversions which were made during the course of the study.

The CMT machine as constructed for use with cellophane would not feed polyethylene film. Also, as is the case with most cellophane-wrapping machines in the cigarette industry, it was designed to seal with a combination of solvent and heat. The sealing devices were stripped from the machine and a systematic program started to adapt the machine to feed, fold and seal polyethylene overwrap.

The first step in solving the feed problem was to install a set of Simco static-eliminator bars on each side of the film in the feed line. The merits of these static eliminators were not at first apparent, but as further progress was made in feeding polyethylene film they became indispensable.

The two sets of powered rolls which unwind and deliver the film to the package pick-up section of the machine were not wide enough to exert force on the entire width of the film. This caused such uneven stresses in the film that feeding was impossible because of wrinkling and gathering. New rolls which would span the width of the film were fabricated and installed on the machine. These wider rolls helped to eliminate some of the difficulty; but, after running a few feet of the film, wrinkles would still develop and the condition would become worse with continued operation. It was discovered then that the delivery rolls were of slightly larger diameter than the unwind rolls. It became apparent that this was a design feature intended to keep cellophane film drawn tight between the two sets of powered rolls in order to maintain proper registration for the tear-tape cutting operation. Because polyethylene film will stretch much more than cellophane and does not allow as much slippage between the rolls, the tension built up unevenly and resulted in wrinkling of polyethylene film. In order to correct this tension variation, one of the delivery rolls, which is covered with a layer of cork, was divided into five circumferential sections by cutting ⅛-in. grooves into the cork. Flat areas were then ground across the width of the cork surface of each section, two to each section, at alternating intervals. These modified rolls provided equal tension and feed control across the width of the film.

After being passed through the delivery rolls, the film is pushed downward without support to the cut-off knife assembly and on into the throat of the wrapping section for a distance of about 8 in. before the individual wrapper is cut off and picked up by the package. Frequently the polyethylene film would curl and jam against the stationary knife or cling to metal parts of the throat and cause stoppage. A line of air jets, positioned to force a stream of air downward between the edge of the knife and the film, successfully eliminated this problem. As a further means of maintaining continuous feed, corrugators were placed in the space between the delivery rolls and the cut-off-knife assembly. As with the FA machine, the corrugators formed evenly spaced wrinkles in the film [*Continued on page 168*]

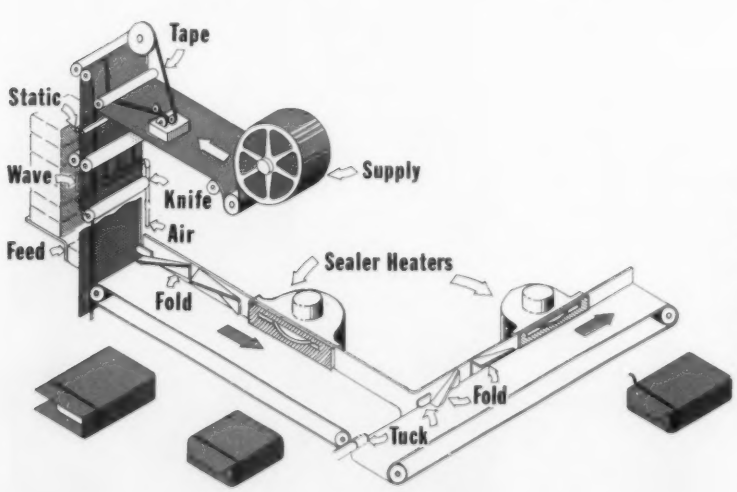


Figure 4. *Schematic of Package Machinery CMT cigarette-wrapping machine, showing conversion features which made possible the production of tear-strip wrap of medium-density polyethylene film at the same 125-per-minute speed as with cellophane.*

Adhesion of waxed glassine

An examination of the various considerations in effective adhesive sealing of this important food-packaging material, covering two approaches to the problem. By Peter S. Columbus*

Waxed glassine is widely used for the protective packaging of numerous products, particularly foods. Since it affords high resistance to grease, moisture and odor transmission, it is an excellent—as well as relatively inexpensive—packaging material that will retain the taste, odor and freshness of foods for a lengthy period. In addition, it makes an attractive package since (a) it is almost transparent and (b) it is perfectly suitable for printing, whether it is wax coated or remains uncoated.

Glassine, as such, is a supercalendered greaseproof paper that is comparatively easy to adhere to itself with most typical packaging adhesives. However, when the glassine is coated with paraffin wax for additional protection, adhesion of the waxed glassine to itself is much more difficult to attain. One must either (a) penetrate the wax coating to obtain glassine-to-glassine adhesion or (b) adhere the non-porous wax surfaces together with a "suction"-type bond. In practice, both of these approaches are used. Each has its advantages, as well as its disadvantages, and much depends on the particular job to be done. Tables I and II list some of the advantages and drawbacks of each type.

Penetrating adhesives

Adhesives that penetrate the wax to give a glassine-to-glassine bond are (a) dispersions of polyvinyl acetate in water containing a large amount of wax solvent, (b) "hot-melt" adhesives, (c) animal-glue solvent types and (d) starch solvent types.

Of these, the polyvinyl acetate plus solvent type is by far the most widely used in industry, especially for fabricating waxed glassine bags (Figure 1).

A typical polyvinyl acetate dispersion-type formula is:

Polyvinyl acetate dispersion	50.0%
Wax solvent	48.9
Wetting agent	1.0
Defoamer	0.1
	100.0%

Polyvinyl acetate dispersion. The polyvinyl acetate aqueous dispersion can be one of several commercially prepared homopolymer "emulsions" that are on the market. The percentage of total solids is usually about 55%. Occasionally it is advisable to use a copolymer-type polyvinyl acetate dispersion, especially when one desires (a) a degree of heat resistance, (b) a permanently plasticized bond and (c) greater viscosity stability at low pH values.

The wax solvent. Chlorinated aliphatic hydrocarbons are commonly used as the wax solvents. These include carbon tetrachloride, trichloroethylene and 1, 1, 1, trichloroethane. They may be used alone or in combination. Sometimes an aromatic solvent such as benzene or toluene is added to a chlorinated aliphatic solvent. Also, a low-boiling naphtha may be incorporated in a mixture together with a chlorinated solvent or a mixture of chlorinated solvents.

Performance-wise, carbon tetrachloride is the preferred solvent for use in this type of adhesive. It is an excellent solvent for paraffin wax (the best of the chlorinated solvents). It is a good solvent for polyvinyl acetate, so that it readily incorporates itself into the dispersed particles of the resin and swells them, giving rise to a thickened but somewhat stable "emulsion." Also, carbon tetrachloride is nonpolar, so that on application of the adhesive to the waxed glassine, it readily frees itself from the polar resin, attacks the paraffin wax and is lost through evaporation in a relatively short period of time. Thus, solvent penetration of the wax is accomplished with a minimum of "lingering" residual solvent odor in the package. In addition, carbon tetrachloride is non-flammable.

A great drawback to the use of carbon tetrachloride is its high degree of toxicity. It is the most toxic of the chlorinated solvents mentioned above. It has a tolerance in air of 40 ppm in comparison with 200 ppm for trichloroethylene and 500 ppm for 1,1,1, trichloroethane (1).[1] In several geographical areas the use of carbon tetrachloride is prohibited in adhesives used for food packaging.

Recently, a solvent system has been developed by

*Chemist, Arabol Mfg. Co., New York.

[1]Numbers in parentheses identify References appended.



ALL PHOTOS COURTESY KEHR PAPER PRODUCTS

Figure 1. *Typical waxed glassine bag-making operation. Waxed stock enters machine from lower right. Seam glue is applied at upper right and stock is folded lengthwise to form a flattened tube. Tube is then cut to bag lengths; glue is applied to one end and it is folded to form bottom of bag. The finished bag then travels through a pressure unit.*

Erikson and the author (2) that imitates the physical properties of carbon tetrachloride when incorporated in a polyvinyl acetate waxed glassine adhesive. Its rates of wax penetration and evaporation are very comparable to, yet this solvent is far less toxic than, carbon tetrachloride.

The wetting agent. The proper "wetting" of the wax surface by the adhesive is of prime importance in the adhesion of waxed glassine. An evenly spread film, which allows intimate and maximum contact between the surfaces of the wet adhesive and the wax coating, greatly facilitates the penetration of the wax by the solvent in the adhesive. Also, it results in a fairly "straight glue line" instead of an intermittently or irregularly adhered area. This lends greatly to the efficiency as well as the appearance of the package.

Many commercially prepared anionic and nonionic wetting agents may be employed. In addition, glycols such as glycerine and diethylene glycol tend to improve the wetting properties of the adhesive.

The defoamer. As a rule, a defoamer is not employed in a waxed glassine adhesive unless it is absolutely necessary. Usually, this is the case when the adhesive has a relatively low viscosity and is subjected to fast agitation on machining. Great care must be exercised in adding the proper amount, as well as the proper type, of defoamer, lest the wetting properties of the adhesive be impaired.

Table I: "Suction"-type adhesive

Advantages	*Drawbacks*
1. Can bond heavily wax-coated stock	1. As a rule "runs dirty" on machining. Clean-ups are difficult
2. Usually faster drying	2. Rarely gives a "fibre-tearing" bond. Film stretches under stress
3. No volatile chlorinated solvents to create health hazard	3. Often glue line is visible and differs in color from wax. Adversely affects appearance of package
	4. The suction wax-to-wax bond is often not too permanent. Despite precautions, the natural latex is gradually oxidized on aging. Also, the bond is specific in nature, "Cold Flow" may readily occur
	5. Metal parts coming in contact with the wet adhesive should not contain copper or managanese

Penetration factors

As stated previously, when using a polyvinyl acetate dispersion plus solvent type of adhesive, adequate penetration of the wax coating is a necessary prerequisite to attaining a satisfactory bond. There are several factors that may affect this penetration and which, consequently, must be considered when compounding this type of waxed glassine adhesive. These include (a) the amount of paraffin wax applied on the glassine (usually expressed in pounds per ream); (b) the melting point of the wax; (c) the length of the time interval between the waxing of the glassine and the fabrication of the package; (d) whether or not the paraffin wax is modified with additives (to give further protection, prevent "blocking," etc.); (e) whether or not heat is applied

to the freshly glued surfaces, and (f) the quality and weight of the glassine itself.

Amount of wax. The polyvinyl acetate dispersion plus solvent type of adhesive is recommended for adhering waxed glassine that is coated with up to 3 lbs. of unmodified paraffin wax per ream. Occasionally, adequate adhesion is attained with as much as 4½ to 5 lbs. of wax per ream without the application of heat to the freshly glued surfaces. This is usually the situation when the glassine is waxed "on line." In this case, the glassine is printed, waxed, glued and fabricated into a package, all in one machine operation.

Melting point of the paraffin wax. The lower the melting point of the paraffin wax, the easier it is penetrated by the wax solvent in the adhesive. The fully refined paraffin waxes that are commonly used to coat glassine have melting points that range from 133.5 to 143.5 deg. F., depending upon the grade used. The softening points of these waxes vary from 115 to 124 deg. F. Occasionally, paraffin waxes of higher melting points are mixed with the above, or used alone, in order to give further protection or to lessen "blocking" tendencies in the finished waxed-glassine stock. Some of the melting-point grades of American Paraffin Wax that are commercially available and gaining acceptance are 133/135, 135/137, 138/140 and 143/145 deg. F. AMP. Commercial grades of Asiatic Paraffin Wax include 138/140, 143/145, 148/150, 158/160 and 163/165 deg. F. AMP (3). In addition to these, microcrystalline waxes, as well as other additives that affect the melting point of the wax coating, are sometimes employed. More will be said of these later when we discuss the adhesion of waxed glassine coated with "modified" paraffin wax.

Effects of aging on the paraffin-wax coating. Old waxed glassine stock is more difficult to adhere than freshly coated stock. On aging, the wax coating becomes progressively less susceptible to penetration by the wax solvent in the adhesive. This phenomenon can be partially explained by studying the crystal habit of paraffin wax.

When the waxed glassine is freshly waxed, the crystalline structure of the paraffin wax is almost amorphoid. On further cooling, relatively large crystals (macrocrystals) are formed. Essentially, these crystals (see Figure 2) assume predominantly one of two shapes, depending on the manner in which the wax is allowed to cool. If the wax is cooled slowly, the macrocrystals formed are plate shaped (orthorhombic crystals). On the other hand, if the wax is cooled rapidly, long, needle-shaped crystals are formed (hexagonal crystals).

On aging, the hexagonal crystals revert, very gradually, to the orthorhombic structure. The wax coating feels harder to the touch and assumes a more glossy appearance.

The crystalline forms mentioned above have different solubility rates in wax solvent. Listed in the order of decreasing solubility rates, they are: amorphous, hexagonal and orthorhombic. Thus, the length of time between (a) the waxing of the glassine and (b) the gluing and fabrication of the package is very important in the adhesion of waxed glassine.

The adhesion of waxed glassine that is waxed "on line" (as described previously) with from 4½ to 5 lbs. of paraffin wax per ream is thus possible because of the relatively amorphous crystalline structure of the freshly applied wax. However, as a rule, adequate adhesion is attained with up to 3 lbs. of unmodified paraffin wax per ream when the waxed glassine stock has been allowed to age approximately two weeks before being glued. This is by no means a strict rule, as much depends upon the qualities of paraffin wax and glassine that are used.

Modified paraffin wax. Occasionally the paraffin wax used to coat the glassine is "modified" with additives in order to improve (a) the water-vapor resistance (WVR), (b) the aging qualities and (c) the non-blocking properties of the finished waxed glassine stock.

Bleached Galacian ozocerite, because of its excellent durability, elasticity and resistance to marked changes in temperature, is commonly added in small quantities to improve the aging properties of the wax coating, as well as to increase its WVR protection. Also, American petroleum ozocerite is used as well. They have high melting points and a microcrystalline crystal structure. Since the melting point

Figure 2. *Two types of crystals found in paraffin wax. Orthorhombic shapes result from slow cooling of wax; long hexagonal needles, from rapid cooling.*

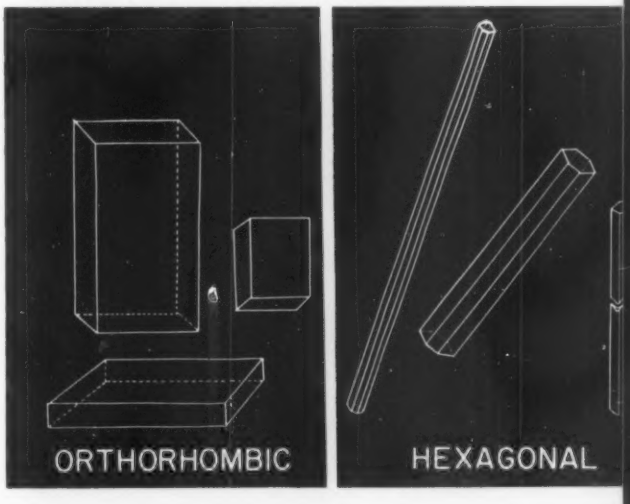




Figure 3. *Wheel applying glue (white line) to waxed glassine stock.*

of the paraffin wax is raised by their addition, they also function to lessen blocking tendencies. Unfortunately, ozocerite is much less soluble in wax solvent than is paraffin wax, so that its addition to the latter renders it less susceptible to penetration by wax solvent in adhesive. Carbon tetrachloride (100 ml.) dissolves 11.78 gms. paraffin wax (130 deg. F. m.p.), but only 1.95 gms. of ozocerite (3).

Polyethylene wax is often used as an additive to decrease blocking. The addition of a small quantity of polyethylene wax to paraffin wax increases the blocking temperature of the latter to a marked degree. Polyethylene is highly resistant to water and most chemicals. It is insoluble in polar solvents and only slightly soluble in relatively non-polar solvents such as naphtha and toluene. Sometimes 0.1 to 0.2% of polyethylene is added to a less refined paraffin wax in order to raise its blocking temperature. This is done by some wax suppliers for a price advantage. This "straight wax," as it is called, is thus less soluble in wax solvent and adds to the gluing problem.

There are many brands of microcrystalline waxes commercially available that may be blended with paraffin wax. When the microcrystalline wax is added to the melted paraffin, the melting point of the blend is greatly elevated and the crystallization of the paraffine[2] wax is depressed. As might be expected, these high-melting microcrystalline waxes are less soluble in wax solvent than is paraffin wax, so that their presence also will make adhesion of the waxed glassine more difficult. Other additives that might interfere are a variety of compatible resins and rubber derivatives (3).

Often the paraffin wax is modified to such an extent that adhesion of the waxed glassine is only possible if heat is applied directly to the freshly glued surfaces and an acid, such as phosphoric acid, is incorporated in the adhesive.

Use of heat to aid penetration. When employing a polyvinyl acetate plus solvent type of adhesive it is sometimes necessary to apply heat to the waxed-glassine stock prior to or during the fabrication of the package in order to attain adequate adhesion. This is the case when the waxed glassine is (a) coated with "modified" wax; (b) aged 3 lbs. per ream stock (the crystal habit of paraffin wax is completely reversible, so that the orthorhombic crystalline structure of the coating is rendered amorphoid with the application of heat), (c) coated with more than 3 lbs. per ream when not waxed "on line" and (d) coated with more than 5 lbs. per ream when waxed "on line."

As explained previously, adhesion results will vary depending on the qualities of the paraffin wax and glassine. If the wax is modified, the extent of modification is an important factor to be considered. Heat may be applied directly to the freshly glued surfaces by means of a hot roller or a gas flame. Another approach is gently to soften the entire area of the waxed glassine stock immediately before applying the adhesive and fabricating the package. This is done by passing the stock through a heating tunnel equipped with a sensitive temperature control.

Quality and weight of glassine. Waxed glassine manufactured from highly calendered glassine that is very moisture resistant, due to a prolonged beating of the pulp and incorporation of additives, is more difficult to adhere than waxed glassine made with a glassine having a more "porous" surface. This is true because a relatively non-porous glassine

Table II: Polyvinyl acetate dispersion and solvent-type adhesives

Advantages	*Drawbacks*
1. Often possible to achieve a 100% fibre tearing bond	1. Often contains volatile chlorinated solvents. Adequate ventilation is essential
2. Clean running on machining	2. Slow drying. May take three days or longer before final adhesion is obtained and solvent odor retention is negligible in dry film
3. Bond obtained is a relatively permanent glassine-to-glassine mechanical bond	3. To adhere heavily wax-coated stock it is necessary to use heat to aid penetration
4. The dry polyvinyl acetate film is colorless	

[2]The harder, fully refined paraffin waxes are sometimes referred to as "paraffines."

resists penetration by the wax solvent and water in the wet adhesive film. We might say it affords a "second front" of resistance. In order to achieve proper penetration and adequate final adhesion, a steady flow of wax solvent, water and resin particles must pass through the wax coating and come in contact with the glassine. The water and wax solvent particles must continue their journey until they are lost through (a) evaporation and (b) absorption by the glassine. In time, enough resin particles are "carried to" and accumulated between the glassine layers to give an adequate fibre-tearing bond.

When it is necessary to apply heat to the waxed glassine, the weight of the glassine is another important factor to be considered. The heavier the glassine, the less the heat transmission from the outer, directly heated surface of the waxed glassine to the innermost wax layer in contact with the wet adhesive film. The magnitude of the heat applied to the outer layer is limited. In the fabrication of bags, overheating results in blocking and in scorching of the waxed glassine in direct contact with the heat source.

"Hot-melt" waxed glassine adhesives. A hot-melt type of waxed glassine adhesive would contain film-forming elastomers and tackifying resins. The resin employed must be compatible with the elastomer and paraffin wax. The hot-melt adhesive is solid at room temperature. When it is used, it is heated in the machine to a recommended running temperature (at which the proper viscosity and speed of set is attained for a given machine) and is applied hot to the waxed glassine. On contact with the waxed glassine, the hot adhesive melts and dissolves the paraffin-wax coating. Thus, in actuality, the wax is incorporated in and becomes part of the adhesive film that gives the final glassine-to-glassine bond.

In the manufacture of waxed glassine bags, hot-melt adhesives are not commonly used to fabricate the complete bag. Generally, they are used for duplexing work (spotty adhesion between the two walls of a double-walled bag), or as a heat-seal coating for the top of the bag.

Animal-glue and starch-type solvent adhesives. Considerable volume of animal-glue and starch-type (separately or in combination) solvent adhesives have been produced for adhering waxed glassine. These types of adhesives are suitable for lightly waxed glassine (less than 2 lbs. unmodified paraffin wax per ream), but have been largely replaced with the resin-type waxed glassine adhesives.

'Suction'-type adhesive

As mentioned previously, the "suction" type of waxed glassine adhesive, contrary to the polyvinyl acetate plus solvent type, does not function by penetrating the wax coating to give glassine-to-glassine adhesion. Instead, it functions by adhering the relatively non-porous wax surfaces together with a wax-to-wax bond. The "nature" of this bond differs from that of the glassine-to-glassine bond. McBain and Hopkins (4) state that, essentially, there are two types of adhesion: mechanical and specific. Mechanical adhesion involves the imbedding or "keying" of the adhesive into the crevices of a porous material. Specific adhesion involves a molecular force of attraction between the adhesive and a relatively non-porous surface. It suffices to say that the glassine-to-glassine bond achieved with the polyvinyl acetate type is an example of a bond that is predominantly mechanical and that the wax-to-wax "suction" bond is predominantly specific in nature.

A typical "suction"-type of waxed-glassine adhesive formula may be represented by:

Natural latex emulsion	30.0%
Resin emulsion	69.5
Antioxidant	0.3
Defoamer	0.2
	100.0%

The natural latex. The natural latex may be any of the premium, commercially available, 60% total solids variety. It must be stable and capable of withstanding the addition of a large excess of tackifier resin emulsion without coagulating.

The resin emulsion. A tackifier resin emulsion of 50 to 55% total solids may be prepared for use in the formula above. It is recommended that a fully saturated resin be used [*Continued on page 152*]

Figure 4. *Striated roller applying glue to the bottoms of waxed glassine bags.*



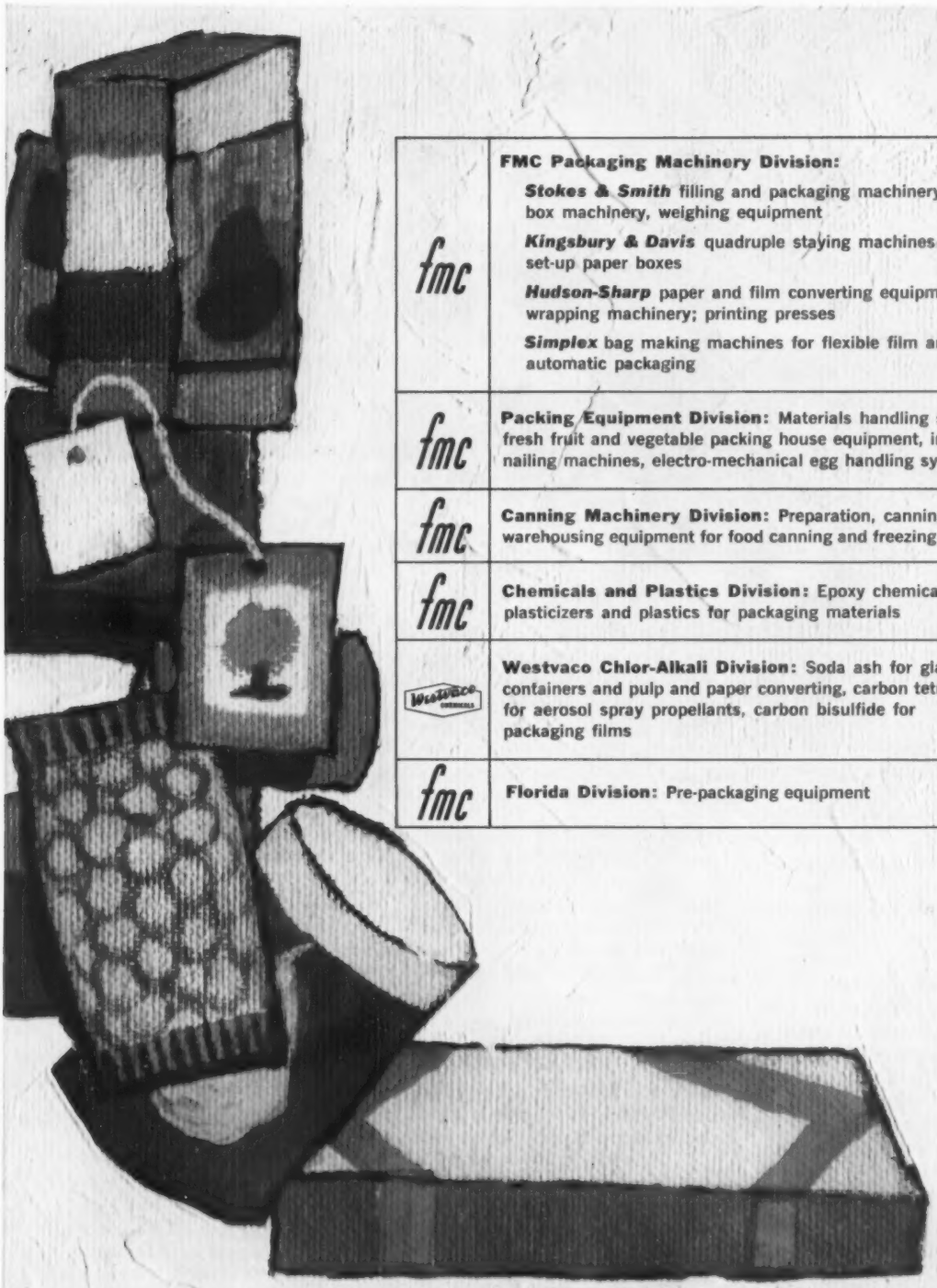
HOW FMC SERVES PACKAGING

FMC products serve nearly every segment of the packaging trade, through the specialized operations of the six divisions listed on the opposite page. These products include machinery and equipment for not only complete packaging operations, but also to perform converting, special wrapping, filling, sealing and other specific tasks. Certain FMC chemicals are also used in the production of various primary packaging materials.

FMC's work in the packaging field is a good example of how our company's policies benefit our customers. While each FMC operation can and does provide specialized attention to a customer's individual needs through its own creative and productive resources, it also calls upon, in many cases, the talents and facilities of other FMC operations, as well as the services of our central research and development laboratories. In this way, our customers have the advantage of direct personal service backed by the combined knowledge and experience of our entire organization.

As in packaging, FMC's progressive policy of product diversification and decentralized manufacturing is successful in many other industries. These practices, plus constant acceleration of research and engineering activities, have made FMC a leader in **Basic Chemicals, Industrial and Agricultural Machinery, and Military Defense Materiel.**

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fmc	**FMC Packaging Machinery Division:** ***Stokes & Smith*** filling and packaging machinery, set-up box machinery, weighing equipment ***Kingsbury & Davis*** quadruple staying machines for set-up paper boxes ***Hudson-Sharp*** paper and film converting equipment; wrapping machinery; printing presses ***Simplex*** bag making machines for flexible film and automatic packaging
fmc	**Packing Equipment Division:** Materials handling systems, fresh fruit and vegetable packing house equipment, industrial nailing machines, electro-mechanical egg handling systems
fmc	**Canning Machinery Division:** Preparation, canning, and warehousing equipment for food canning and freezing industries
fmc	**Chemicals and Plastics Division:** Epoxy chemicals, plasticizers and plastics for packaging materials
Westvaco	**Westvaco Chlor-Alkali Division:** Soda ash for glass containers and pulp and paper converting, carbon tetrachloride for aerosol spray propellants, carbon bisulfide for packaging films
fmc	**Florida Division:** Pre-packaging equipment

Putting Ideas to Work

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This consultation service on technical and engineering packaging subjects is at your command. Simply address your questions to Technical Dept., Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

New shipping 'cases'

Q: *We have heard rumors about a new method of packaging cartoned products for shipment. We understand that these new shippers do not employ corrugated board. Can you tell us more about them?*

A: Two new techniques are now in commercial use that utilize heavy kraft paper wrappers to hold product containers in a tight bundle. One method, which is actually a bundling operation using roll-stock material, is applied to cartoned products and has won approval by the Interstate Commerce Commission. The other process, involving pre-formed paper sleeves, is currently used for shipping products in composite cans. It is expected to get ICC approval shortly. Great savings in freight weight and cost of materials are claimed for these shippers and they are now being tested for a wide variety of other packaged products, including canned commodities.

Small-product pilferage

Q: *We package colored marking and drawing inks that must be packaged in small bottles for reasons of product shelf life and customer convenience. However, pilferage in supermarkets and variety stores has been a serious problem, even when the bottles are further enclosed in a folding carton. How can we solve this troublesome problem?*

A: One answer, now used by ink manufacturers and many other packagers of small bottled products, is to blister or skin package the bottles on a hang card. This not only increases the size of the unit and thus makes pilferage impractical, but gives a much larger promotional surface for merchandising. The pegboard display also provides a better sales position in the store for a small product. And the card package enables simple and inexpensive inclusion of such premium promotions as marking pens and tips-for-use booklets.

A fairly new form of skin packaging, which has dramatic sales impact, suspends the product between two layers of clear film in a folded, die-cut card. This provides a three-dimensional package with almost complete product visibility.

Troublesome candy carton

Q: *We are having a great deal of trouble obtaining a permanent seal on our candy carton. We are using a glue flap with a skip-sealing pattern of adhesive for a secure deal that is still easy to open. However, the flaps break open during shipment. Can you tell us why this occurs and what is wrong with the way we are packaging our product?*

A: Examination of the filled sample container that you sent us, which is a combination tuck-end and lock-end carton with a partial glue-flap cover, shows two major points that may cause your difficulty:

1. The fudge-type product, which completely fills the carton, appears to have bulged under the weight of warehouse stacks—exerting pressures on the sides and tuck ends of the carton that tend to spring the glue flap. This condition is exaggerated by the extremely light weight of the cartonboard (10 point), which would not seem to be suited to this dense product. The bunch-folded inner cellophane wrap also increases "opening" pressure.

2. The dot seal on the glue flap appears to be a cold dextrin adhesive, which may give ease of opening, but is either not strong enough for this packaging condition or was not held under compression long enough for the adhesive to set up.

There are several ways in which you can correct these faults:

1. Increase the weight of your cartonboard and change the tuck-end construction to a full tuck-top design, also switching the cellophane inner wrap to an outer overwrap. If the carton needs protection from the product, a coated or lined board can be used.

2. If the dot-pattern glue flap is desired, switch to a hot-melt adhesive that will set up in a shorter time, or use a full glue flap with a cold adhesive and an adequate compression unit. The full flap would also remain compressed after the casing operation to allow a sufficient time for the cold glue to set up.

Pouch for bulky items

Q: *Are there any pouch-packaging machines available for handling bulky, non-granular products?*

A: Continuous pouch-packaging machines have now been designed for a vast variety of products, ranging from liquids to bulky objects. At the recent PMMI Machinery Show a good cross-section of these types was seen: small units with piston-type fillers and multiple heads for liquids that filled, formed and sealed up to eight pouches at a time; vertical unit packagers, available with up to 10 heads, that handle almost any granular or small solid objects which can be caused to flow in a vibratory weighing device; a tilted packager for particularly fragile or heavy, free-flowing products that is angled at 45 deg. to insure a sliding feed and, finally, a variety of horizontal pouch machines for solid, bulky products which must be placed on a film web before the pouch is formed.

Your question seems to indicate a need for the latter type of machine, which folds the film over the product, applies a longitudinal seal and then seals off the individual packages with either reciprocating or drum-mounted impulse jaws, depending on the type of unit. If your product has a uniform shape, you can probably use automatic feeding devices. Otherwise hand feeding is necessary.



Andre and Natalie Harley, photographed recently during a visit to their Paris agents, S.C.E.R.A.



We see here samples of the world famous Lanvin line. Manufactured on specially made board for Lanvin, these cartons are lithographed and embossed by the House of Harley.



Created under the direction of Sy Wassing, art director of Revlon products, the Living Curl label is manufactured in four colors on silver foil and embossed in the 34 Hubert Street plant of the House of Harley Printing Company.

An American Success:

The Harley Story

It was January of 1948. Most New Yorkers were talking about the death of Mark Hellinger, "A Streetcar Named Desire," Vishinsky, Henry Wallace's third party, and a 25.8" snowfall that still cluttered their streets.

In one corner of this vast sprawling city, a young imaginative couple spoke of nothing but the future. For they had just invested their entire holdings in a life long dream. Their dream was designing and manufacturing the world's most beautiful packages. The couple—Natalie and Andre Harley.

Today, that dream is a reality. The House of Harley has risen and is accepted as designers, creators and manufacturers of the world's most beautiful folding boxes, box wraps, wrapping papers and labels.

It's a real American success story. One whose fascinating details will be unfolded in this and subsequent issues of Modern Packaging. This story proves that today, in the middle of the 20th Century, a young couple with faith in itself and its enterprise can climb to the top. It proves too, that no matter how competitive the industry, the priceless ingredients of technical knowledge, inborn taste, hard work and honesty can be blended to help achieve this summit.

The climb to the top was not done by words, but by deeds. By producing results which others have tried to surpass . . . but have not yet been able to equal.

Let's go back to 1948 when the House of Harley was founded by this young European couple.

This million dollar enterprise was started in a tiny office with a "man Friday." Original capital consisted of knowledge, imagination, enthusiasm . . . and $1000 borrowed from a friend.

From the start, "The House of Harley" fired the imagination of the cosmetic and perfume industries with new designs and concepts in quality packaging. But success did not come overnight.

Days grew into weeks, and weeks into months. Inquiries and occasional orders arrived with each mail. The early orders were small, requesting special art work or small runs of display boxes and window displays. But every inquiry and every order was received and treated with enthusiasm and a desire to produce the best. It was this painstaking attention to detail and craftsmanship that paved the way toward bigger and more complex packaging responsibilities. Overwhelming customer acceptance opened the way to House of Harley's unquestioned leadership in producing some of the world's finest packages.

Natalie Harley had studied art both in France and in the United States. She was born with a sure taste which she has developed to its full maturity in her many achievements for the long list of top accounts which the House of Harley handles today. Accounts that include such names as Lanvin Parfums, Elizabeth Arden, Helena Rubinstein, and Revlon.

Andre Harley, since his early youth always has been attracted to printing and graphic arts. He was a journalist, a public relations man, an advertising man, and, above all, a salesman. This is borne out by the manner in which he placed the name of "Harley" on the international scene and built the "House" into the leading establishment it is today . . . standing among the best printers of luxury packaging.

In the next issue, you will read about the House of Harley, as it moved "On the Way Up" and how the Harleys introduce glitter, flitter and fancy novelties into the field of packaging.

Of course, if your packaging needs are more imminent . . . don't wait until next month, but write, wire, or phone today. The House of Harley, Inc., 15 East 40th Street, New York 16, New York Cable address—Harleyart New York MU 6-2984.



Among the most recent and most elegant achievements by the House of Harley are these new D'Orsay folding boxes, printed in one color gray. The shield is gold bronzed, and the whole carton is embossed. This is a typical example of the achievement of elegance and simplicity for superlative products by the House of Harley.

Plants & People

General Foods Corp., White Plains, N.Y., has created two new packaging posts. **William D. Enzie** becomes material services director and **Theodore J. Holmgren** becomes design services director. Mr. Enzie has been with GF since 1948 and most recently was mgr. of package design and development for the company's **Birds Eye Div.** That position is now being filled by **Norman Vanasse**, who has been Mr. Enzie's assistant since 1956. Mr. Holmgren, a specialist in package design, was formerly asst. to the pres. of **Donald Deskey Associates**, New York, an industrial design firm.



Jansing

Hudson Sharp Machine Co., Green Bay, Wis., sub. of **Food Machinery & Chemical Corp.**, has promoted **Richard E. Jansing, Jr.**, to the post of gen. sales mgr. He was formerly Green Bay district sales mgr. He is now in charge of the company's sales, service and advertising depts. and will locate at the main office. Mr. Jansing has been with Hudson-Sharp since 1947.

Chippewa Plastics Co., Chippewa Falls, Wis., has purchased the Salinas, Calif., plant of **Package Containers, Inc.**, and will operate it as its **Flexible Packaging Div.** Using the whole range of flexible-packaging materials—including foil, polyethylene and cellophane—the new div. will manufacture produce bags, overwraps, heavy-duty industrial bags and drum liners. Sales mgr. of the new div. is **John F. Pandolfo.** Chippewa is a div. of **Rexall Drug & Chemical Company.**

William L. Elleman, formerly with **Spencer Chemical Co.**, has been named pres. and chief exec. officer of **Dura-Pak Corp.**, Dallas.



Hanlon

Joseph T. Hanlon has been appointed mgr. of advertising and sales prom. of **Crown Cork & Seal Co.**, Philadelphia. Mr. Hanlon has held various advertising and sales-promotion assignments, the most recent being that of sales prom. mgr. for the company. He has been with Crown for more than 20 years.

Hercules Powder Co., Wilmington, Del., is building its second plant for the production of polypropylene. Located at Lake Charles, La., the new plant is expected to go on stream early in 1961. It will be geared for a production capacity in excess of 100 million lbs. per year. Hercules' first polypropylene plant, in Parlin, N.J., has been in operation for more than two years. The company reports that its decision to expand polypropylene production was based on widespread market acceptance of the material.

Robert K. Stolz has been appointed v.p. for forward planning and **John L. Wilson** has been named v.p. of research and development by **Packaging Corp. of America**, Chicago. Both men formerly were execs. of **American Box Co.**, now one of the three major divs. of the recently formed corporation.



Stolz *Wilson*

Macauley Whiting has been named gen. mgr. of the Midland Div. of **Dow Chemical Co.**, Midland, Mich. He succeeds the late **Dr. William H. Shuette.** Mr. Whiting was formerly mgr. of the div.'s service depts., a post he had held since 1956.

As new national food packaging sales mgrs., **S. M. Sawyer** and **J. R. Bennett** have been assigned joint responsibility for sale of cups to food packagers, including dairies, by the **Dixie Cup Div.** of **American Can Co.**, New York. Mr. Sawyer will be responsible for national accounts. Mr. Bennett will handle accounts not under Mr. Sawyer's jurisdiction.



Burleson

Aiming to increase the use of aluminum cans and foil containers, **Reynolds Metals Co.**, Richmond, Va., has created a new position—product director for aluminum cans and rigid foil containers. **M. Neal Burleson** has been named to assume this new responsibility. Mr. Burleson formerly was mgr. of Reynolds' aluminum-can marketing group.

New executive appointments have been made by **Fibreboard Paper Products Corp.**, San Francisco. **Carroll D. Austin** has been named director of a new dept., called bakery, meat and vegetable-oil packaging merchandising. **William H. Ecker** becomes mdsng. mgr., tubes and cans, succeeding **Walter D. Heller**, retired. New mdsng. mgr., distributor sales, is **Robert E. Melberg.** He succeeds **Fred A. Reuther**, now Sacramento district sales mgr. **Garth H. Miller** becomes mdsng. mgr., cannery, dried fruit and specialty foods. He succeeds **H. C. Hamlin, Jr.**, now Northern Packaging Div. sales mgr.

New appointments in Fibreboard's Packaging Group are as follows: **George A. Hynes**, to mgr., product mdsng.; **Joseph M. Schmied**, to senior design engineer; **C. F. Jean Arrasmith**, to Fresno district sales mgr.; **A. W. Brown, Jr.**, to Portland (Ore.) district sales mgr., and **James D. Terrell**, to Oakland district sales manager.

Two major British packaging-material-supply concerns, **Metal Closures, Ltd.**, of West Bromwich, and **John Dale, Ltd.**, of London, have merged. There has been a subsequent interchange of top officers between both boards.

Malcolm J. Odell has been named product development mgr. for **Crocker, Burbank Papers, Inc.**, Fitchburg, Mass. The appointment is in line with expansion of the company's activities in polyethylene-coated papers, for which new facilities were installed recently.



Smith

Jeane L. Smith has been appointed product supervisor for **Stanley Home Products, Inc.**, Westfield, Mass. She is now responsible for the design of all labels and containers, as well as promotional material on Stanley's products. Mrs. Smith, formerly asst. to the director of marketing and merchandising, has been with the company since 1947.

Celanese Corp. of America, New York, has purchased **Royal Mfg. Co.**, Prescott, Ariz. A manufacturer of blow-molded plastic containers, Royal will be operated as a div. of Celanese. The parent company reports that Royal facilities will be expanded to serve nationwide markets. Expansion plans include increasing the capacity of the div.'s plants at Prescott and Chicago and opening a new plant on the East Coast, Celanese reports.

Nolde A. Norman, a veteran of 47 years in the glass-container field with **Owens-Illinois Glass Co.**, Toledo, O., has retired. He had been at the company's Indianapolis branch since 1926.

Joseph G. Morris, Jr., has been named gen. mgr. of **Vaculite Corp.**, Hamilton, O. Vaculite is owned jointly by **National Research Corp.** and **The Champion Paper & Fibre Co. Allan R. Dragone** becomes product mgr. for metalized products in Champion's printing-papers sales div. He will continue as v.p. of Vaculite. **Charles G. Ellington, Jr.** becomes director of planning for Champion's converting products

CASE HISTORY



of the now famous P. Lorillard combination package
...HOW A GOOD PACKAGE WAS MADE BETTER!



Step No. 1
ORIGINAL PACKAGE design by Plaxall. Two-piece construction featured pressure formed clear acetate SLIDEPLAX with tracks on the back, and separate styrene platform to hold lighter... Package proved an immediate merchandising success.



Step No. 2
PACKAGE IMPROVEMENT by Plaxall. Rounded corners improved over-all appearance of the package and cut-back tracks permitted easier, labor-saving insertion of the cardboard backing.

Step No. 3
PRESENT PACKAGE as perfected and improved by Plaxall.

SLIDEPLAX unit revised so as to eliminate the separate platform... yet cigarettes and lighter are held securely in single piece pressure formed construction... a further saving in loading time and production cost.

This policy of package improvement is fundamental with Plaxall. The P. Lorillard Company package is just one of many, wherein the continuous application of Plaxall engineering, design skills and high speed production facilities have resulted in better plastic formings at lower cost.



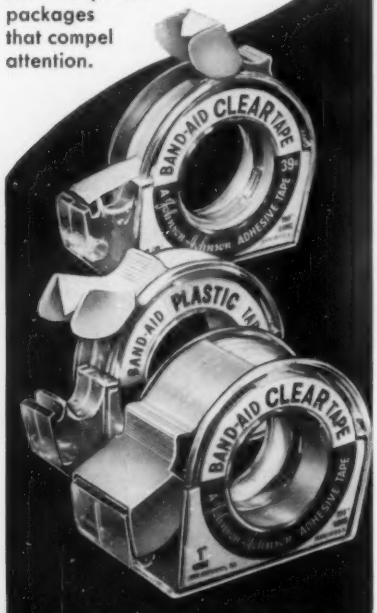
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Plants & People [*Cont'd*]

group. Vaculite is currently producing a highly reflectant paper, metal-coated by a vacuum process, for use in packaging and other fields.

William H. Delavan has retired as pres. of the **Delavan Div.** of **Mead Containers, Inc.**, Cincinnati, a sub. of **The Mead Corp.** Mr. Delavan's former duties have been assumed jointly by **Paul H. Fulmer** and **Kenneth G. Foeppel.** The div. makes corrugated shipping containers.

West Virginia Pulp & Paper Co., New York, has created a new sales office to be known as the Middle Atlantic Sales District. **H. Lockwood Frizzell** has been promoted to head the new district, which will cover Maryland, Virginia and North and South Carolina.

Carl E. Doane has been named sales mgr. of the flexible packaging div. of **Nashua Corp.**, Nashua, N. H. He is succeeded as sales mgr. of the company's converter sales div. by **Walter P. McLaughlin.** Mr. McLaughlin was formerly in charge of sales to the corrugated box industry. He is now responsible for sales of corrugated boxes, set-up boxes and flocked products. Mr. Doane will direct sales to the baking, confectionery and other industries.


Doane *McLaughlin*

Willard Levin has been appointed sales mgr. of the **Acme Carton Div., Stone Container Corp.**, Chicago. The firm is a manufacturer of folding cartons and set-up boxes.

A $13.5 million semi-chemical corrugating medium mill is being constructed at Port St. Joe, Fla., by **Florida Gulf Fibre Co.**, a firm newly organized by the **St. Joe Paper Co.** of Houston, Tex. The facility will have a daily capacity of 450 tons of neutral sulphite semi-chemical corrugating medium. **Harry J. Stellmann**, a v.p. of the new company, will supervise construction of the plant.


Wood

Leonard J. Wood has been appointed product mgr. of the paper div. of **National Starch & Chemical Corp.**, New York. Mr. Wood started his career with National Starch in 1946 as a chemist in the paper service and development dept. He was later transferred to adhesive and starch technical sales. Most recently, he was mgr. of paper development and service.

Charles N. McElmon is newly appointed mgr. of distributor sales for Arkell & Smiths, Hudson Falls, N. Y. He was formerly sales prom. and advertising mgr. and has held various posts, both in sales and manufacturing, since joining the paper-bag manufacturing company in 1952.

Edward A. Coleman, formerly plastics-sales rep. in the New York office of the Closure & Plastics Div. of **Owens-Illinois Glass Co.**, Toledo, O., has been promoted to Eastern mgr. of closure sales for the company. Before transferring to New York in 1955, Mr. Coleman served as closure consultant in O-I's packaging research div. at company headquarters. **T. Robert Santelli** has been named asst. director of research by O-I. He succeeds **Robert T. Wallace**, now with the International Div.


Coleman

The assets of **Diamond Plastic Industries, Inc**, formerly the **Hake Mfg. Co.** of Roanoke, Va., have been acquired by a new Indiana corporation which will retain the original name of **Diamond Plastic Industries, Inc.** The new organization will be operated by the **Paper Packaging Co.**, Indianapolis. **Donald B. Fobes**, pres. of the parent company, will serve as pres. of Diamond Plastic, which continues to manufacture stock plastic boxes.

Clifford R. Henderson has been named to head up sales in the new Gravure Dept. of **Pamarco, Inc.**, Roselle, N.J. The company is a supplier of rolls for printing and converting.


Keyser

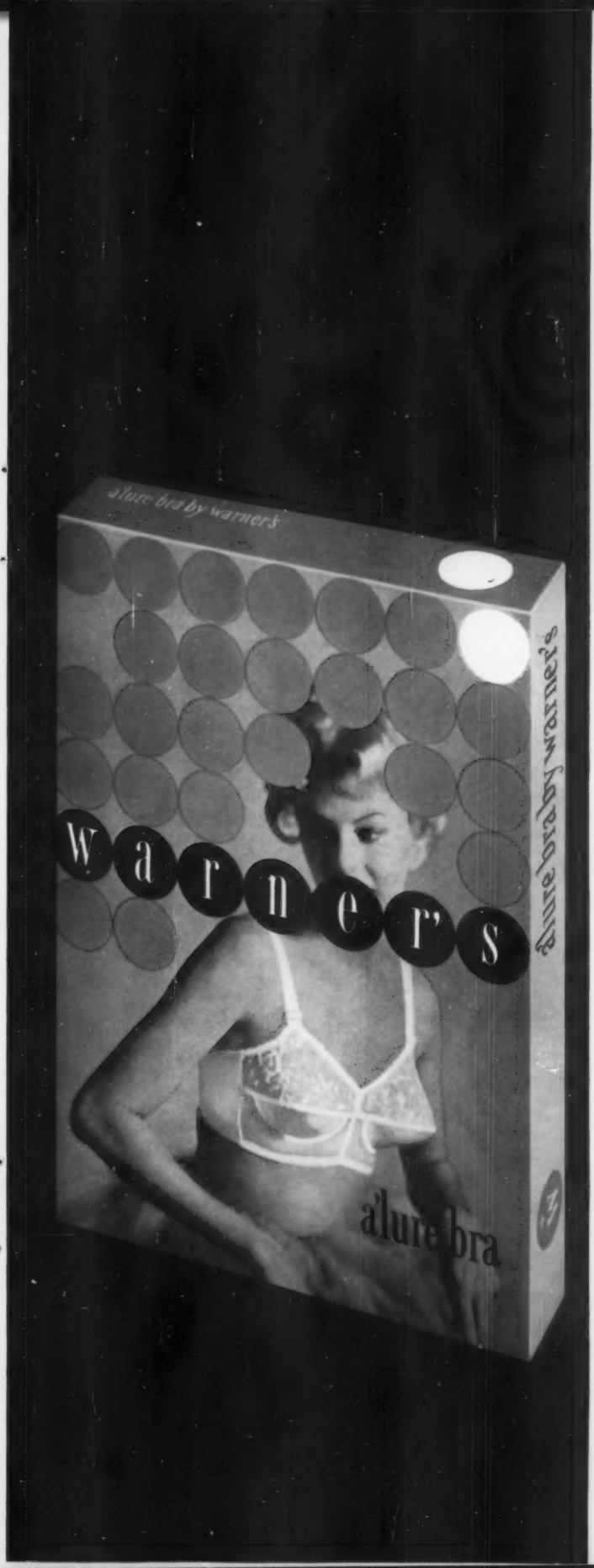
George N. Keyser becomes product sales mgr. for industrial products, **Chippewa Plastics Co.**, Chippewa Falls, Wis. The company is a div. of **Rexall Drug & Chemical Co.** Mr. Keyser will be responsible for developing new applications for Chippewa's heavy-duty polyethylene industrial bag. He was formerly sales mgr. for **Arkell Safety Bag Co.**, Chicago.

Dr. Edward A. Nebesky has joined the staff of the Food Science Dept. at **Rutgers University** as professor of food science. Dr. Nebesky, who formerly taught at Cornell and the University of Massachusetts, has also had experience in packaging as product mgr. in **The Cryovac Co.** He is a member of the **Packaging Institute.**

Irwin H. Dennen has been named mgr. of sales development for **Tee-Pak, Inc.**, Chicago. Tee-Pak makes cellulose casings for meat products.

Packaging & Plastics Co., Hialeah, Fla., has been organized as a manufacturers'-representative agency for companies in the packaging and plastics fields by **Aldo S. Pero.** Mr. Pero formerly was v.p. of **Fluid Chemical Co.**, Newark. The new company's address is 408 E. Okeechobee Road.

Strong Cobb Arner, Inc., custom manufacturer of pharmaceutical and



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The Warner Brothers Company
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Printed in five colors by
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Plants & People [*Cont'd*]

allied food and chemical products, has entered the aerosol packaging field through its acquisition of **PanPak, Inc.**, of Attica, N. Y. PanPak will be operated as a sub. of the parent company. PanPak was established in 1954 by **Joseph M. Rait** to produce dental anesthetic in aerosol form. Dr. Rait will continue as president.

The creation of two new depts. to coordinate business planning and advance technology within its Forest Products Group has been announced by **Owens-Illinois Glass Co.**, Toledo, O. **Fred B. Schelhorn** becomes v.p., applied research and development; **Thomas M. Cox, Jr.**, becomes v.p., business planning and analysis. O-I's Forest Products Group consists of the company's mill, paper-products and multiwall-bag divs., and **National Container of California.**



Schelhorn *Cox*

George W. Menkes has been elected v.p. of **Testing Machines, Inc.**, Mineola, N. Y. He had been company sales mgr. for the past four years. The company makes and distributes test equipment for plastics, paper products, textiles, rubber, metal and containers.



Schwyn

Robert L. Schwyn has joined **Corning Fibre Box Corp.**, Corning, N. Y., as sales mgr. He was formerly associated with **Container Corp. of America** and has been active in the paper industry for more than ten years. Corning Fibre Box, a sub. of **Corning Glass Works**, makes corrugated packaging specialties and shipping containers.

M & S Roll Engraving Co., East Brookfield, Mass., is now a div. of **Atlantic Engraving Corp.**, West Warwick, R. I. **Edward Megarry**, formerly owner of M & S, will be pres. of the division.

Sun Chemical Corp., New York, has purchased **Steel City Printing Ink Co.**, Pittsburgh, its ninth acquisition in 12 months. The newly acquired company will operate as a unit of **General Printing Ink Co.-Midwest**, under **Weldon R. Coate**, div. vice president.

E. M. Abrams has been appointed to the newly created post of v.p. and gen. mgr. of **The Lawson Co.**, div. of **Miehle-Goss-Dexter, Inc.**, Chicago. Mr. Abrams was formerly secy. of the firm, which makes paper-cutting, trimming and drilling equipment.

William J. Pelich has been named to the post of sales mgr. for the **Denison Engineering Div. of American Brake**



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For noticeably brighter, cleaner packages ... and extra eye-appeal ... try Riegel's outstanding new carton stock ... Foldcote.™ Superwhite for color brilliance, super-smooth for high-fidelity reproduction ... super-strong for a rugged, rigid package. Ask for samples and full information. Ask too, about other solid bleached boards tailormade to your needs. Write to Riegel Paper Corporation, 260 Madison Ave., New York 16, N.Y.

Quality Lithographing, Atlanta, uses Riegel Foldcote for the Coble Ice Cream container. Printed in four colors by offset lithography.

"there is only one reason for designing a package . . . to sell more of a product"

PACKAGE

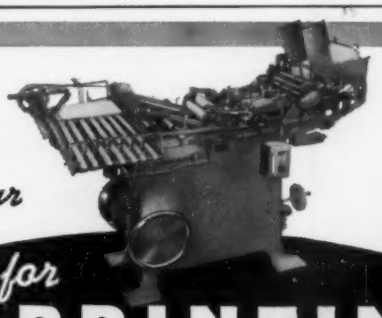


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Plants & People [*Cont'd*]

Shoe Co., Columbus, O. He will handle marketing of Denison multipresses and hydraulic pumps and controls.

Crown Cork & Seal Co., Philadelphia, has opened a new can-manufacturing plant in Winchester, Va., to accommodate the growing food-processing industries in the area.

The Mead Corp., Dayton, O., is building a $1.4-million addition to its research center in Chillicothe, O.



McCarthy

Vern I. McCarthy, Jr., has been named pres. and director of marketing of **Vulcan Containers, Inc.**, Bellwood, Ill., manufacturer of steel shipping containers. He succeeds **Vern I. McCarthy, Sr.**, who moves up to chairman of the board. The new pres., a director of the Packaging Foundation of **Michigan State University**, has worked for the company for more than 15 years.

F. J. Stokes Corp., Philadelphia, has begun an expansion of production and engineering facilities. The company is building an annex to its present plant.

Design Directions, Inc., package-design consulting organization, has moved to 307 Fifth Ave., New York.

Hooker Chemical Corp., Niagara Falls, N. Y., is establishing corporate headquarters in New York City. New offices will be at 666 Fifth Avenue.

The Black-Clawson Co., New York, has begun construction of a research laboratory in Middletown, O. It will be equipped to investigate aspects of paper-stock preparation and other papermaking operations.

A new corrugated-container-manufacturing firm has been established in Fort Worth, Tex. **O'Grady Containers, Inc.**, with **Bill O'Grady** as pres., has opened a plant at 2418 Cullen.

Regency Plastics, Inc., Woodside, N. Y., a sub. of **Cary Chemicals, Inc.**, has entered the packaging field. The firm now offers a complete line of packaging films and laminates. **Martin Klein** has been named gen. manager.

Promotions

R. T. Blowney: to mgr., San Francisco branch, Pacific Coast Div., **Owens-Illinois Glass Co.**, Toledo, O. He is succeeded as mgr. of the beverage-industries div. by **Richard L. MacMullin. Lyle Sampson:** to mgr., dairy and instant-product divs. **F. D. MacIver, Jr.:** to district mgr., closures and plastics.

Robert E. Glass: to director of packaging, **Publicker Distillers Products, Inc.**, Philadelphia.

Ben Orr: to Eastern sales mgr., **Tipper Tie Products of New Jersey, Inc.**,



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Swayze Folding Box Co., Canton, Pa., uses Riegel Foldcote for the Colgate Lather Shaving Cream carton printed letterpress, 2 colors.

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Plants & People [Cont'd]

Union, N. J. George Manahan: to Midwestern sales mgr. Tipper Tie makes casing-closure machines.

J. R. Jones: to sales mgr., Kansas City, Multiwall Bag Div., West Virginia Pulp & Paper Co., New York. He succeeds Roy E. Jury, now district sales mgr. for Hinde & Dauch Div. on the West Coast.

Robert H. Short: to district sales mgr., Kansas City, Hazel-Atlas Glass Div., Continental Can Co., New York. He succeeds Brooks Gall, who will retire.

Appointments

Gilbert Johnson: from J. L. Lucas & Sons to sales mgr., can-making-machinery div., The Max Ams Machine Co., Bridgeport, Conn.

Calvin E. Schildknecht: to consultant, Armstrong Cork Co., Lancaster, Pa. Dr. Schildknecht is chairman of the Chemistry Dept. of Gettysburg College and has been active in research and commercial development in the field of vinyl-type polymers.

H. R. Bishop: from Kautex U. S. Sales Co. to mgr., Middle Atlantic and Southern sales district, Polymer Chemicals Div., W. R. Grace & Co., Clifton, N. J.

Clarence F. Fleischner: from Pure-Pak Div., Ex-Cell-O Corp., to gen. sales mgr., Warwick Wax Div., Western Petrochemical Corp., New York.

Ernest Nathan: to mgr., embossing-roll dept. sales, Pamarco, Inc., Roselle, N. J.

Obituaries

Henning W. Prentis, Jr., chairman of Armstrong Cork Co. since 1950, died on Oct. 29. He was 75 years of age. Mr. Prentis, who joined the company in 1907, served as its pres. from 1934 to 1950. He was the first mgr. of Armstrong's advertising department.

Albert Biner, 74, partner in the Biner-Ellison Machinery Co., Los Angeles, died Oct. 20. Considered a pioneer in the packaging-machinery field, Mr. Biner spent 53 years in the industry. He founded Biner-Ellison in 1938.

Alfred W. Hanmer, 55, died Nov. 10 in New York City. Associated with the plastics industry for the past 33 years, Mr. Hanmer, at his death, held the position of sales mgr. of the Durez Plastics Div. of Hooker Chemical Corp.

Jack D. Roberts, v.p. and treas. of Harcord Mfg. Co., Jersey City, N. J., died suddenly on Oct. 20. He was 50 years old. Mr. Roberts had been with Harcord since 1949. The company is a manufacturer of paperboard-body canisters.

Ben Lewis, package designer, died Nov. 14 after a long illness. He was 57. Mr. Lewis won a number of prizes for package designs in the cosmetics and toiletries fields.



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Many of The American Tobacco Company's 20/200 LUCKY STRIKE cartons are manufactured on Riegel Foldcote. Printed gravure in 2 colors.

Equipment & Materials

[*Continued from page 46*]
holes. The machine, which fits into the production line in synchronization with the sewing machine, is supplied with a heat-seal block, tape folder, bag feed and pressure-roll unit. *Crown Zellerbach Corp., Multiwall Bag Sales Div., 343 Sansome St., San Francisco 19.*

Heavy-duty PVC drum liner

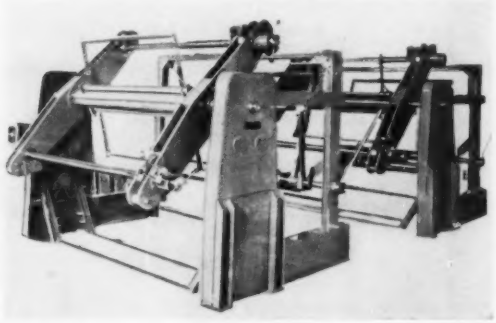
A heavy-duty drum liner, made of specially formulated, chemically resistant, 20-mil polyvinyl chloride, is offered by Protective Lining Corp. Designed to fit the standard 55-gal. drum, the liner is suggested for use in the bulk packaging or storage of such materials as sodium hypochlorite, plating chemicals or heavy caustics. It is claimed to be resistant to most chemicals except very heavy acids in concentrated form. Other cited features of the liner are that it is leakproof, has great tensile and tear strength, and that it retains its properties in a temperature range of minus 25 deg. F. to 230 deg. F. In addition to the 55-gal. liner, other sizes are available, in round or square shape. *Protective Lining Corp., 22 Woodhull St., Brooklyn 31.*

Versatile imprinting attachment

Bell-Mark's Model 1006-A Electra-Printa is an electrically operated miniature imprinting attachment. It imprints registered marks on continuous or intermittent product runs without requiring a change of cylinder. The unit imprints top surfaces of jars, cartons and other containers, and also can be used to imprint moving webs of film and paper. Up to 100 impressions per minute can be made, the supplier notes. The solenoid operated machine is available in two models, with imprint areas of 3 by 1 in. or 3 by 2 in. It is reported to be easy to install, using the mounting shaft of any packaging or processing machine for driving. *Bell-Mark Corp., 18 Ropes Pl., Newark 7.*

Flying-splice unwind and rewind

Converters Machine reports that its newly introduced flying-splice unwind and rewind unit makes it possible to equip converting machinery with such equipment at a moderate



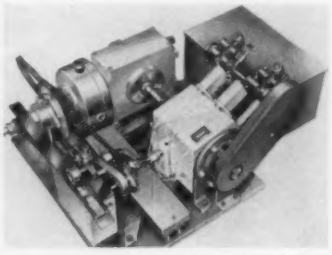
price. The European-built device will effect semi-automatic splices at speeds up to 600 ft. per minute, and automatic splices at speeds up to 1,200 ft. per minute, says the supplier. Hydraulic braking action is designed to provide uniform tension. Further details are available from *Converters Machine Co., Greenwich, Conn.*

Improved heat-sealable label paper

Nashua's IMAC ML-5 is a new heat-sealable label paper which is claimed to offer improved adherence to all grades of film used in pre-packaging applications. Its sealing action, says the supplier, eliminates losses caused by damage to packaging films and products in the process of labeling. Other features cited for the label paper are that it: is faster activating; is capable of activating and adhering properly at low or high labeling-machine operation speeds; can be applied manually, semi-automatically or automatically, and that its activation point is lowered without lowering the blocking point. The paper can be applied in a temperature range of 180-345 deg. F. It reportedly will give a paper tearing bond on aluminum foil as well as on conventional pre-packaging films. *Nashua Corp., Nashua, N.H.*

Adhesive applicator does many jobs

A new, high-capacity applicator for its Thermogrip brand cord-like hot-melt adhesives has been developed by United Shoe Machinery. The Model BW Thermogrip Applicator reportedly will glue plain kraft boxboards, a variety of waxed boards and materials surfaced with foil or polyethylene. Rated capacity of the new unit is 1,500 ft. per minute of adhesive in ¼-in. continuous seam or 1,000 ft. per minute of ⅜-in. seam. The hot-melt adhesive also can be applied in dots or other broken-line patterns. The applicator is designed for use primarily in straight-line gluing operations on carton-making or gluing machinery. The gluing mechanism can be fitted for mounting on its side or in inverted position, so that materials can be passed against the transfer wheel for gluing from above, below or to a vertical surface. *United Shoe Machinery Corp., 140 Federal St., Boston 7.*



New flexographic offset press

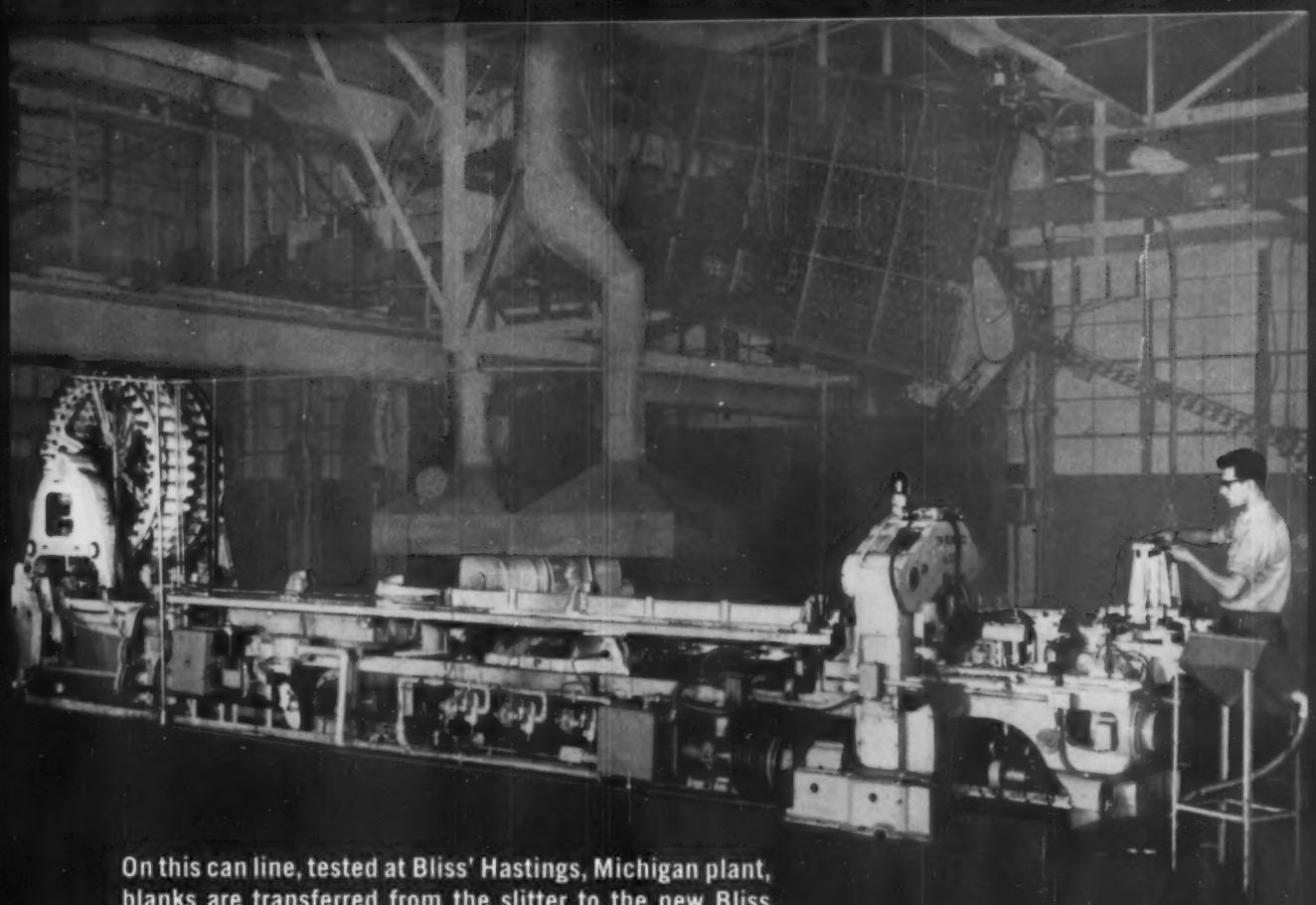
A low-priced flexographic offset press, suitable for short-run operations, fast makeready and fast color changes, is available from KamRu Products. It is adaptable to printing on regular or irregular shapes, including plastic containers. Rubber plates or changeable type can be used. Among the features cited for the new press are: two-color, close-register printing in a single pass; manual or automatic feeding, and quick, easy color change. Further data are offered by *KamRu Products Corp., Sandusky, O.*

Extruded nylon film and sheet

United States Gasket reports that it is now marketing extruded nylon film and sheet in gauges ranging from two to 60 mils. It is available in 18-in.-wide rolls of unlimited length. Already in use as a wrapping material—particularly for fresh meats—nylon film is reported to be resistant to grease, abrasion and vapor; to have a low coefficient of friction and a low permeability factor, and to be steam-sterilizable. *United States Gasket Co., Camden, N.J.*

Film coated by aqueous-dispersion method

Claimed to be the most moistureproof film now available for running on high-speed packaging machinery is TCF of Canada's new MXXT. The sparkling transparent film is copolymer-coated cellophane. The coating is applied by the method of aqueous dispersion, which reportedly allows the selection of a more moistureproof polymer resin. Ac-



On this can line, tested at Bliss' Hastings, Michigan plant, blanks are transferred from the slitter to the new Bliss 603 Universal bodymaker. From here, the finished bodies are automatically transferred through flanging, seaming and testing – all at speeds up to 450 per minute.

BLISS MAKES 2 MILLION CANS IN NOVEL TEST OF CAN LINE

For a few weeks last fall, E. W. Bliss Company was in the can-making business. When Bliss finished building the first of six complete can lines, they thoroughly tested the line by producing 2,000,000 cans in their own plant at Hastings, Mich.

Almost completely automatic in operation, the line produced the finished, tested cans at speeds up to 450 per minute.

Key unit is the new Bliss 603 Universal Bodymaker, shown above. The 603 makes a wider assortment of can sizes than any other bodymaker; can turn out bodies as large as 6-3/16″ diameter and 5-9/16″ high. The substitution of standard change parts enables it to make bodies 7-13/16″ high! This remarkable versatility makes the 603 ideal for packers who use many different can sizes.

It will pay you to take a look at the new 603 and other equipment in the Bliss high-speed can line. To get complete information on these products, ***see us at the Canners Show, Booth No. 204.***

BLISS
SINCE 1837 ®

E. W. BLISS COMPANY · Canton, Ohio

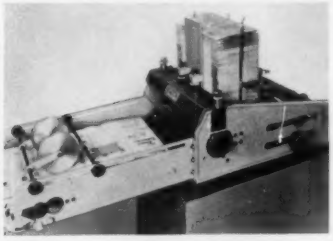
BLISS is more than a name—it's a guarantee

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cording to the supplier, aqueous dispersion also causes the base film to be wetted so that stresses are relieved, with the result that its dimensional stability is greater than that of films coated by conventional methods. The film is suggested for use in window cartons or as an overwrap for cartons. The supplier says that the film retains its moisture-proofness even when subjected to printing, heat sealing, creasing and contact with products containing fats and oils. *TCF of Canada, Ltd., 1015 Beaver Hall Hill, Montreal 1, Canada.*

Two new coding devices

Two new carton-coding machines are being offered to packagers by Gottscho. Shown is the Cartoncoda, which is claimed to imprint flat folding cartons at speeds up to 350 per minute. Magazine-fed and controlled by foot pedal, it will accommodate carton flats ranging in size from ½ by 2 in. to 8 by 12 in. The other new item is a conveyor and case-sealer attachment which automatically places code imprints on the rear surfaces of cartons and shipping cases as they travel along the line. The Series 210 Rolacoder will handle any size container, from 3 in. high on up. Its coding head automatically moves out of the housing as the container travels by, rolls its imprint across the rear surface, and then retracts to its original position. *Adolph Gottscho, Inc., Hillside, N.J.*



Top-and-bottom latex coater

Designed for use by manufacturers of self-seal paper bands is Potdevin's new top-and-bottomside latex strip-coating machine. An attachment for quickly adjusting coating locations on the bank of strip rollers permits making a wide range of self-sealing bands for such products as shirts, ties, curtains and yarn. Bands of up to 60 in. wide can be made. Sheets to be latex-coated are fed into the machine's coating section, which automatically applies latex to the top and bottom of the material. Sheets than are carried through electric ovens for drying. Production speeds of up to 100 ft. per minute can be achieved, says the supplier. The new unit also can be used for applying re-moistenable strip glue to one side of the paper only, for the production of labels, tape, blister packages, window streamers and other items. *Potdevin Machine Co., Teterboro, N.J.*

New stackable glassine bag

Designed primarily for the packaging of potato chips and similar products is Arkell & Smith's new automatic style multi-ply bag. A feature of the bag is its broad, flat bottom, which facilitates stacking and display on store shelves without the use of racks. The inner and outer plies of the bag are wax-laminated glassine, separated by a ply of sulphite. The heavy wax lamination reportedly provides a strong moisture barrier and also strengthens the package to reduce bag breakage during handling operations. *Arkell & Smiths, Inc., Canajoharie, N.Y.*

New line of label dispensers

Derby Sealers has introduced three new Grip-A-Tab dispensers for pressure-sensitive roll labels. Known as the "L" series, the models are claimed to incorporate a new method of feeding that increases the flow of labels and reduces time-consuming delays in production-line labeling. According to the supplier, a new feed-and-rewind mechanism results in faster loading and easier operation, and overcomes the problems caused by adhesive transfer from labels to liner paper. Another feature cited by the company is a two-part rewind core construction, which is claimed to permit easy disposal of the rewound liner without the need for constant tear-off of the liner. The new units are: the Model LH-10 for labels up to 1 in. wide, the Model LH-20 for labels up to 2 in. wide and the Model L-30 for labels up to 3 in. wide. The first two are lever-operated; the third is electrically operated and is equipped with a heater and rheostat speed control that will deliver up to 15 ft. of stock per minute. *Derby Sealers, Inc., Derby, Conn.*

Box-tying machine for bakers

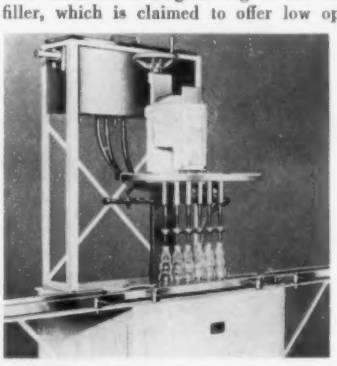
Developed for the wholesale baking industry is Bunn's new automatic tying machine. It is reported to be especially suitable for tying open-end bread cartons. According to the supplier, the machine can prolong the life of bread cartons as much as 20 to one over cartons closed by other means. The device makes a double-wrap, one-way tie around the carton. It is adjustable to accommodate boxes up to 30 in. long. To tie a carton, the operator places the container on the slant-frame unit's waist-high table and steps on a foot trip. This causes a revolving arm carrying twine to encircle the box twice, after which a knotter automatically engages to tie a double-loop knot in the twine. A cutter snips the twine close to the knot. Total tying time is three seconds. *B. H. Bunn Co., 7605 Vincennes Ave., Chicago 20.*

Low-cost epoxy adhesive

Claimed to cost one-half to one-third as much as similar products of the same chemical family is Rubber & Asbestos' Bondmaster M685—a 100%-solids, unfilled, modified epoxy adhesive. It is designed for use in general-purpose bonding where strengths of the epoxy order are called for, as well as in the bonding of polystyrene to wood, metal or other rigid surfaces. It is a free-flowing-liquid, intermediate-strength, clear-amber, two-component, modified epoxy adhesive. Mixed weight, with hardener, is 9.6 lbs. per gal. At room temperature, the bonded assembly can be handled in 6-8 hours, and develops 85% of maximum strength in 14-24 hours. It can be heat-cured in as little as 10 minutes at a temperature of 250 deg. F., says the supplier. *Rubber & Asbestos Corp., Bloomfield, N.J.*

Gravity filler offers economies

New from Ertel Engineering is the Model EGR gravity filler, which is claimed to offer low operating costs. The unit will fill cans, plastic bottles and other standard containers up to 1-gal capacity with a minimum neck opening of 7/16 in. It will not collapse or distort containers and is especially suited to the filling of foaming liquids, says the supplier. A feature of the machine is the "drip-proof" spout assembly, which is reported to provide for quick horizontal and vertical change-over. Simplicity of spout design, the company points out, permits easy dismantling and cleaning. *Ertel Engineering Corp., Kingston, N.Y.*



Polyethylene-film punch press

A machine designed for fast, efficient and economical punching of holes in lay-flat polyethylene film is available from Thermoplastic Equipment. The company's Model M2-SW punch press operates on a simple pneumatic principle. It will perforate three lay-flats simultaneously for a total of 100 ft. per minute, says the supplier. Rows of holes of ½-in. or ¾-in. diameter can be punched on lay-flat film of up to 35 in. wide, within 3 to 4 in. of center. *Thermoplastic Equipment, Div. Thermoplastic Process Co., Stirling, N.J*

THILCO

POLY·KRAFT

HEAT SEALABLE

POUCH PAPERS



PROBLEM: Machine package curtain rod hardware in a protective pouch complete with printed trade-mark identity and installation instructions.

SOLUTION: Thilco clear polethylene coated M. F. Kraft permits high speed machine sealing — provides protection from dirt, corrosion and loss of parts.

offer "field-tested" proof of packaging superiority for protection and automatic machine forming

THILCO'S diversified range of Poly-Coated paper combinations solve these packaging problems

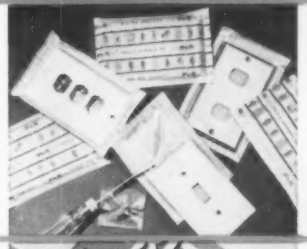
PROBLEM: Package dry soup mix in sales appealing print labeled pouch with positive protection from moisture absorption.

SOLUTION: Thilco white M. G. Kraft is foil laminated one side and clear polyethylene coated on other side for required moisture barrier. Eye catching 4-color label decoration is Thilco flexo-printed on gleaming foil side.



PROBLEM: Protect plastic switch plates from dirt and moisture — identify product, and permit consumer selection without opening package.

SOLUTION: Thilco trade-mark decorated M. G. Kraft with scuff-proof, varnished overlay on one side and clear polyethylene coating on other provides protection and medium for heat sealing to "see-thru" cellophane that forms pouch.



PROBLEM: Provide a moisture barrier pouch packet to prevent "caking" of hygroscopic dye granules.

SOLUTION: Thilco polyethylene one side coated M. F. Kraft furnishes the ideal moisture barrier combination. Thilco flexo-printing provides the all-important trademark identification.



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For Your Information

The Packaging Institute reports that it is organizing a Folding Carton Committee within its Materials Div. Broad objective of the committee will be to develop performance standards covering factors involved with folding cartons.

J. R. Kennedy of Federal Paperboard Co. has been re-elected pres. of the **National Paperboard Assn.** **Sture G. Olsson** of The Chesapeake Corp. of Virginia has been re-elected v.p.



Thompson

Election of new officers was conducted by the **Gummed Industries Assn.** at its annual meeting in White Sulphur Springs, W. Va. Named to the post of pres. was **Stuart E. Thompson** of Central Paper Co. New v.p. is **Saul Warshaw** of Atlantic Gummed Paper Corp. Both men will serve for one year. GIA will hold its 1960 meeting in Miami.

Designated an international survey of package design is *Graphis Packaging*, a new book edited by **Walter Herdeg** of The Graphis Press, Zurich, Switzerland. The big (12 by 9½ in.), hard-cover book contains 1,022 illustrations of packages—34 in color—in 290 pages. Emphasis is on the surface design of packages around the world. For simple reference, the book is divided into 15 sections, each covering a different product field or type of package. All text, including captions, is in English, French and German. Copies, at $17.50 each (no charge for packing and postage), are available from The Graphis Press, 45 Nuschelerstr., Zurich 1, Switzerland.

The Lithographers & Printers National Assn. reports that Jan. 18 is the final deadline for submission of entries in its 10th Anniversary Lithographic Awards Competition & Exhibit. All lithography produced during 1959 is eligible for the competition. Winning entries will receive awards at LNPA's 55th annual convention in April.

A new bulletin, of interest to all branches of the plastics industry concerned with food packaging, has been published by the Food Packaging Materials Committee of **The Society of the Plastics Industry.** Supplementing and extending the "Primer" on the Food Additives Amendment of 1958 which the committee published last year, the bulletin, titled "Food Additives Amendment: Migration From Plastics Packaging" integrates the legal and technical implications involved and clarifies the tests required to establish the status of a specific packaging material under the current law. The 31-page booklet is available to non-members at a charge of $2 per copy from the society at 250 Park Ave., New York.

Margery Markley has been elected exec. v.p. of the **Package Designers Council** for 1959-60. Miss Markley, who succeeds **George Reiner,** has been a member of the council since 1953. She served as secy. for two terms and also was a member of the committees for the second and third Package Design Competitions.

The Packaging Foundation, Inc., of **Michigan State University** in East Lansing, Mich., has announced the election of new members to its board of trustees. They include: **T. M. Cook,** Grace Paper Co., div. of W. R. Grace & Co.; **Ira Gottscho,** Adolph Gottscho, Inc.; **Marvin Stone,** Stone Container Corp.; **Lloyd Stouffer,** editor, MODERN PACKAGING; **Karl Weik,** Cello-Foil Products, Inc.; **Robert J. Williams,** Cadillac Products, Inc.; **Dr. F. C. Campins,** Polymer Industries, div. Philip Morris, Inc.; **John E. Kain,** Star Box & Printing Co.; **K. E. Prindle,** The Dobeckmun Co.; **C. Stanley Johnson,** Interchemical Corp.; **Vern I. McCarthy, Jr.,** Vulcan Containers, Inc.; **John Ladd,** General Box Co.; **Joseph J. Tomassi,** Corning Fibre Box Corp.; **Delbert Johnson,** Continental Can Co.; **Phillip C. Althen,** Aluminum Co. of America; **William F. Nichols,** Diamond Glass Co.

Another forum on "Profit Building for Converters," with executives on the panel representing sales, manufacturing and administrative functions, will be a feature of the annual meeting of the **National Flexible Packaging Assn.** at the Waldorf-Astoria Hotel, New York, Jan. 19-21. "Associates Day," always a popular feature, will be repeated.

The Chemical Specialties Mfrs. Assn. held its 46th annual meeting at the Hotel Mayflower in Washington, D. C., Dec. 7-9. Symposiums were conducted by the various CSMA divs. The marketing of aerosols keynoted the program scheduled by the Aerosol Div. Award-winning aerosol packages were on display.

Foams for packaging will be the subject of the first of a series of meetings on packaging and related topics to be held by the **American Management Assn.'s** Packaging Div. during the first five months of 1960. The seminar on packaging foams and expanded plastics will convene Jan. 6-8 at the Hotel Astor in New York.

The following new officers will be installed at the 16th annual technical conference of the **Society of Plastics Engineers** in Chicago this month: pres., **George W. Martin,** Holyoke Plastics Co.; first v.p., **Frank W. Reynolds,** IBM Corp.; second v.p., **Haiman S. Nathan,** Atlas Plastics, Inc.; secy., **James R. Lampman,** General Electric Co., and treas., **Joseph B. Schmitt,** Koppers Co.

Western Michigan University will be host to the fourth annual Pulp & Paper Conference on Jan. 21. The program, based on the theme, "Advances in the Mechanical Treatment of Fibres," is sponsored jointly by the **Paper Industry Management Assn.** and the **Technical Assn. of the Pulp & Paper Industry.**

The **Tag Mfrs. Institute** has established a series of Unusual Tag Awards to provide recognition of manufacturers' efforts to solve unusual tag problems. Presentation of the awards will be made three times each year. The first awards will be given at the next TMI meeting, Jan. 27-29.

Charles G. Rossotti has been elected pres. of the Label Mfrs. Section of the **Lithographers & Printers National Assn.** Mr. Rossotti is board chairman of Rossotti Lithograph Corp.

The technical publications committee of the **Flexographic Technical Assn.** is soliciting articles for possible use in the forthcoming "FTA Technical Manual," an encyclopedia of flexography. Evaluation of all data submitted is under the direction of **Frank A. Hamel, Jr.,** of Del Val Ink & Color, Inc. Material should be submitted to FTA headquarters at 220 W. 42 St., New York.

Events

Jan. 5-10—**American Rack Merchandisers Institute,** ninth annual winter convention, Sheraton Hotel, Chicago.

Jan. 12-15—**Society of Plastics Engineers,** 16th annual technical conference, Conrad Hilton Hotel, Chicago.

Jan. 17-20—**National Canners Assn.,** and **Canning Machinery & Supplies Assn.,** 53rd annual convention, Americana Hotel, Bal Harbour, Fla.

Jan. 19-21—**National Flexible Packaging Assn.,** annual meeting, Waldorf-Astoria Hotel, New York.

Jan. 26-27—**Society of Vacuum Coaters,** annual convention, Biltmore Hotel, New York.

Feb. 2-4—**The Society of the Plastics Industry,** 15th conference of Reinforced Plastics Div., The Edgewater Beach, Chicago.

Feb. 4-5—**Flexographic Technical Assn.,** second annual meeting and technical forum, Palmer House, Chicago.

Feb. 8-10—**Fifth Joint Military-Industry Packaging & Materials Handling Symposium,** Sheraton Park Hotel, Washington, D. C.

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And Gives New Lipstick A TREMENDOUS SALES START

This package, designed and produced by Plastic Artisans, Inc. not only won the Gold Award in its division, but topped all entries to win Best Package of the Year Award for AR. Winarick Inc., N. Y. C. It's a proven sales-winner, too. It has helped give new DURA-GLOSS lipstick immediate sales success.

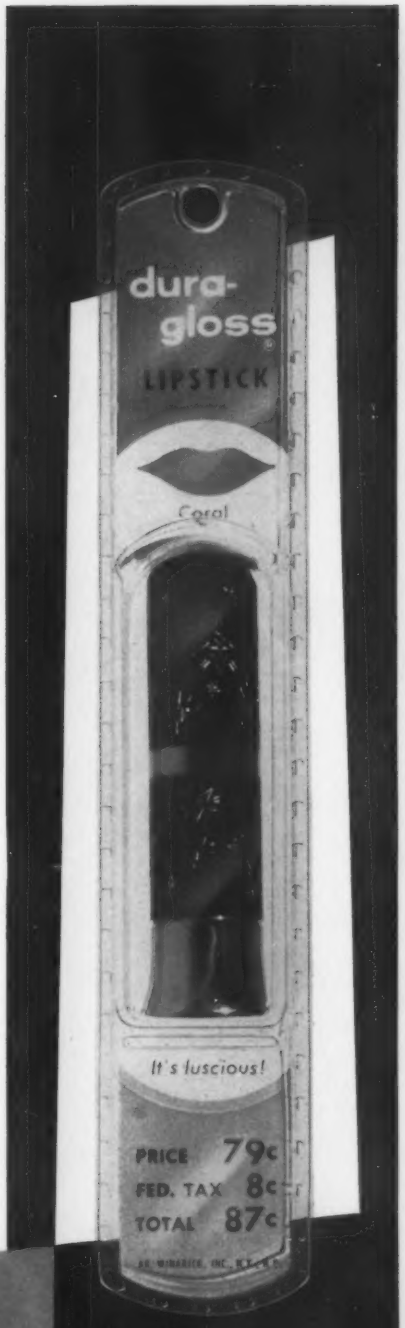
This P. A. package with product and printed material displayed between two transparent plastic domes sealed at edges, provides—

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- ***Protection from handling and pilferage***
- ***Slim design for efficient racking***

Remember that P. A. can both *design* and produce exciting sales packaging for *you*.

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"TRIM" Emery Board "PURSE PAK" For The W. E. Bassett Co.—Silver Award In Cosmetic & Toilet Goods Division.

"CAMEO" Hairbrush & Comb Package For Tek-Hughes—Silver Award In Notions & Allied Lines Division.

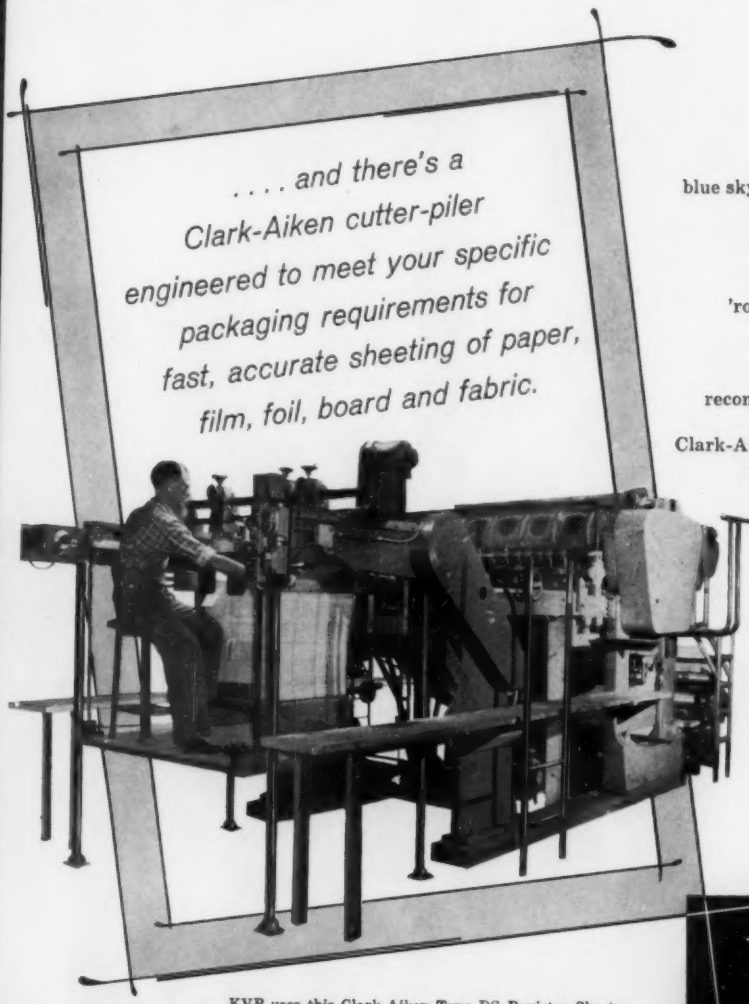
These two packages with plastic components designed and produced by P. A. each won awards in the same contest.

PA-123

THE perfect package REQUIRES precision equipment







KVP uses this Clark-Aiken Type DS Register Sheeter to precision cut light bond, gift wrapping, waxed paper, laminated foil, parchment, and for multiple sheeting ham wrappers.

Creative packaging may start as a piece of blue sky but Clark-Aiken precision sheeting equipment can help make the dream a reality—and with increased production at lower operating cost.

Clark-Aiken designed equipment produces 'round-the-clock finishing room service with minimum maintenance and complete cutting accuracy. And when you consult Clark-Aiken engineers on your particular sheeting problems you get qualified recommendations that are based on an extensive study of **your** needs and shop conditions. Each piece of Clark-Aiken equipment is engineered from the ground up to meet those needs, whether it is for a fully equipped finishing room or one machine to meet a specific sheeting requirement.

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- ☐ Cosmetic Cleansing and All Purpose Lotion
- ☐ Furniture Dusting Polish
- ☐ Furniture Polish (high gloss)
- ☐ Hair Dressing for Men
- ☐ Hair Shampoo
- ☐ Hair Spray Formulations
- ☐ Hair Spray (non-flammable)
- ☐ Hand Cleaner (waterless)
- ☐ Hand Lotion, Creams
- ☐ Hand Lotion, Medicated (non-foaming)
- ☐ Ice Tray Desticker
- ☐ Laundry Starches
- ☐ Leather Dressing
- ☐ Mange Spray, Sarcoptic
- ☐ Nasal Relief Spray
- ☐ Neomycin Foam
- ☐ Neomycin Spray
- ☐ New Hair Spray
- ☐ Paints and Clear Sprays (Market Survey)
- ☐ Paint and Varnish Remover
- ☐ Penetrating Oils and Lubricants
- ☐ Personal Deodorants, External
- ☐ Personal Deodorant Powder Spray
- ☐ Phosphorescent Snow
- ☐ Plant Food, Household
- ☐ Poison Ivy, Oak and Sumac Remedy
- ☐ Pre-Shave Lotion
- ☐ Run Stopper
- ☐ Shaving Cream (non-separating)
- ☐ Shoe Polish, White
- ☐ Shoe Polish and Sprays
- ☐ Spray-on Protective Film (Spray-on Bandage)
- ☐ Suntan Lotions
- ☐ Upholstery Cleaner
- ☐ Varnish, Spar
- ☐ Wall Cleaner
- ☐ Window Cleaner
- ☐ Aerosol Hair Preparations (including hair sprays, hair conditioners, hair dressings, hair color rinse, wave lotions and shampoos)
- ☐ Cosmetic Aerosol Products (including shaving creams, skin lotions and creams, antiperspirants and personal deodorants, suntan preparations, powders, perfumes and colognes, nail preparations, etc.)
- ☐ Household Aerosol Products (including room deodorants, oven cleaner, glass cleaner, disinfectant, mildew proofer, wax polish, water repellant, etc.)

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MG-10

U. S. Patents Digest

This digest includes each month the more important patents of interest to packagers. Copies of patents are available from the U. S. Patent Office, Washington, D. C., at 25 cents each in currency, money order or certified check. Postage stamps are not accepted. Edited by H. A. Levey.

Bagging Machine, Aaron Friedman, Daniel Lurie and Sheldon Dale (to Joe Lowe Corp., New York, a corporation of Delaware). U.S. 2,907,160, Oct. 6. In an automatic bagging machine of the type that receives a stickholder having a plurality of depending confections releasably secured therein, said stickholder having a manipulating handle.

Pressure Seal for Containers, Oliver W. Robertson, Brookline, Mass. U.S. 2,907,492, Oct. 6. A pressure seal comprising two like strips of material of the same transverse dimensions, each strip having a recess in one edge and a tongue projecting from the same edge.

Container for Granular Materials, George H. Pride (to Acme Steel Co., Chicago, a corporation of Illinois). U.S. 2,907,508, Oct. 6. A knock-down shipping container for granular materials such as sugar and the like, comprising a readily disposable, flexible, nonmetallic cylindrical tube open at both the upper and lower ends of said container.

Bottle-Carrier Crate, Charles E. Chamberlin (to Container Corp. of America, Chicago, a corporation of Delaware). U.S. 2,907,509, Oct. 6. In a paperboard bottle-carrier crate, a body portion rectangular in plan, formed from a one-piece paperboard blank and comprising a bottom wall and rigid end and side-wall panels extending upward.

Carton, Oscar L. Vines (to Continental Paper Co., Ridgefield Park, N.J., a corporation of New Jersey). U.S. 2,907,510, Oct. 6. A foldable carton construction wherein—during erection of the carton—a first panel hinged about an axis parallel to and spaced from the plane of a second panel is swung into a final position substantially normal to and in edge-on contact with the said container's second panel.

Reclosable Carton, William R. Saidel (to Foil Cartons, Inc., Chicago Heights, a corporation of Illinois). U.S. 2,907,511, Oct. 6. A carton comprising a bottom wall, two side walls and two end walls, with a permanent top-closure section extending from an end wall inwardly and terminating short of the other end wall to provide an access opening.

Method of Processing and Packaging, William H. Allen (to Joslyn Mfg. & Supply Co., Chicago, a corporation of Illinois). U.S. 2,908,122, Oct. 13. A method of packaging and processing wooden blocks which are substantially rectangular and which have a relatively short dimension in the direction of the grain of the wood and have bevels along the edges thereof.

Apparatus for Automatically Packing Tetrahedron-Shaped Packages, Harry Sigurd Valdemar Jarund, Lund, Sweden. U.S. 2,908,125, Oct. 13. Apparatus for automatically and closely packing three superposed layers each of six congruent packages of substantially regular tetrahedron shape into open-top containers.

Multi-Ply Carton Construction, John D. Miller (to Owens-Illinois Glass Co., Toledo, a corporation of Ohio). U.S. 2,908,436, Oct. 13. A carton construction comprising an open-topped receptacle which includes a bottom wall, walls upstanding from the perimeter of said bottom wall and an internal upstanding partition, with said bottom wall and said partition each being provided with a slit.

Packaging Box, George W. Wiedenmeier (to Vanant Co., Milwaukee). U.S. 2,908,437, Oct. 13. A container for shipping fragile articles, comprising side and end walls, bottom end-wall sealing flaps and foldable V-shaped cushioning flaps connecting the end flaps with the end walls, said cushioning flaps being foldable against the inner surfaces of the end walls.

Reinforced Carrying Handle for Tied-Together Containers and Method of Producing the Same, Adolph Weiss (to American Can Co., New York, a corporation of New Jersey). U.S. 2,908,438, Oct. 13. A carrying device for a pair of juxtaposed rectangular containers having an encircling tie band therearound, said containers having laterally projecting peripheral ledges thereon, with portions of said ledges disposed in opposed contiguous relation.

Valve Means for Dispensing Container, Frank Venus, Jr. (to The Risdon Mfg. Co., Naugatuck, Conn., a corporation of Connecticut). U.S. 2,908,447, Oct. 13. Dispensing valve means comprising a resilient annular valve closing member and a tubular valve stem having an axial passage closed at its inner end.

Carton Set-Up Machine, Michael J. Lawrence (to Chicago Carton Co., Chicago, a corporation of Delaware). U.S. 2,909,105, Oct. 20. An apparatus for setting up folding cartons having foldable corner members which have extending tabs for interlocking with openings in certain of the carton panels to maintain the cartons in erected form.

Can-Handling-Machine Drive and Loading Mechanism, Jack N. Porterfield (to Aluminum International, Denver, a corporation of Colorado). U.S. 2,909,268, Oct. 20. In a can-handling machine comprising spaced-apart side walls defining a chamber and a can-receiving conveyor in the chamber, a loading mechanism located within the chamber and comprising a wheel rotatable about a vertical axis above the receiving conveyor.

Shipping and Dispensing Carton, James A. Govang (to The New Haven Board & Carton Co., New Haven, a corporation of Connecticut). U.S. 2,909,310, Oct. 20. A carton for shipping and dispensing purposes, which comprises a hollow body including a front wall with an opening near its lower end, a rear wall, a top and a bottom closure formed by a flap attached to the lower edge of the rear wall, also including means for closing the sides of the body and for connecting the lower end of the front wall to the flap.

Packaging Machine, Charles L. Barr (to F. B. Redington Co., Bellwood, Ill., a corporation of Delaware). U.S. 2,909,874, Oct. 27. A packaging machine comprising a step-by-step conveyor having a plurality of spaced pockets each adapted to hold an expanded carton.

Bottle- and Jar-Closing Apparatus, John Hohl and Jack M. Wheaton (to Owens-Illinois Glass Co., Toledo, a corporation of Ohio). U.S. 2,909,879, Oct. 27. Apparatus for applying screw-threaded closure caps to product-filled containers having threaded necks.

Carton-Closing Machine, Harold J. Mumma (to Food Machinery & Chemical Corp., San Jose, Calif., a corporation of Delaware). U.S. 2,909,880, Oct. 27. A machine for closing and locking the cover of a carton having a carton body to whose rear wall the cover is hingedly attached and which has an outwardly turned lip along its front wall provided with means adapted to interlock with corresponding means in front.

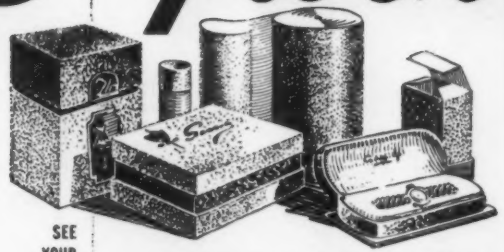
Carton-Filling Apparatus, Charles E. Kerr (to Food Machinery & Chemical Corp., San Jose, Calif., a corporation of Delaware). U.S. 2,910,212, Oct. 27. An apparatus for filling cartons, comprising a disk-like rotatable member having a plurality of measuring pockets uniformly circumferentially spaced inwardly of edge of rotatable member.

Base-Type Holder for Paper Containers, Herbert L. Bennett and Howard Hill (to American Can Co., New York, a corporation of New Jersey). U.S. 2,910,219, Oct. 27. A holder for a flexible, flat-bottomed paper cup having an annular depending skirt below the cup bottom, said holder including a lower support base of substantial diameter.

Produce Tray or Container, Joseph P. Hamilton (to Longview Fibre Co., Longview, Wash., a corporation of Delaware). U.S. 2,910,220, Oct. 27. A produce container formed from a paperboard blank and having a rectangular bottom wall and two pairs of vertical opposed walls, respectively connected with the pairs of opposite edges of said bottom wall.

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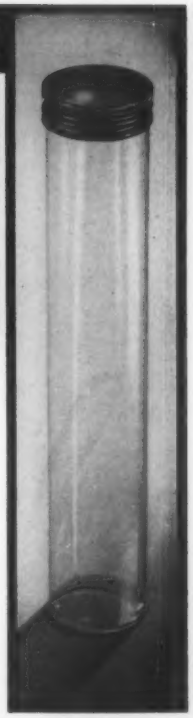
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Anchorglass® containers are available in crystal, amber, emerald green or georgia green glass—in all standard styles, sizes and finishes. And no matter what you package in glass —hot or cold, with or without vacuum, sterilized or processed— there's an Anchor® cap and Anchor sealing machine to meet your individual requirements. Anchor Hocking's complete line provides important glass packaging flexibility and capacity to help you meet your challenge of the 60's. Anchor Hocking Glass Corporation, Lancaster, Ohio—bringing you the extra values of *specialization* in glass packaging.

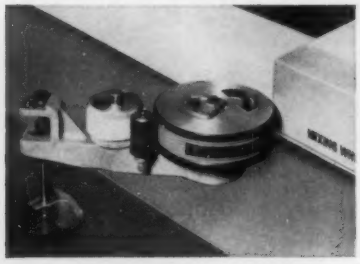
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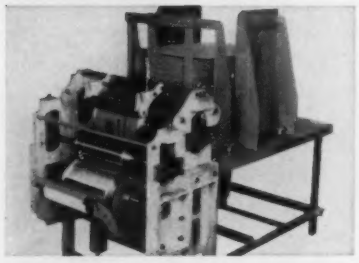
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Welcome to Booth 129, Canners' Show

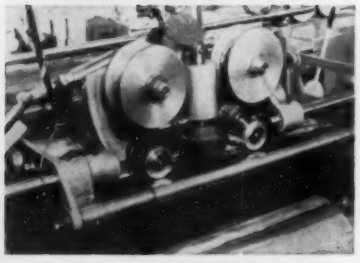
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WHIPPET MARKER® automates imprinting of conveyor-carried containers of all types. Driven by the conveyor and self-inking, it marks your containers as you use them. Attaches easily to any conveyor line.



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RAINBOW CODER® offers you a wide color range in sharp, clear, controlled impressions on any surface that will accept hot roll leaf imprinting. Designed to be synchronized with speed of the packaging machine, it requires no operator, no ink, no makeready and very little maintenance.

Before you buy any marking or imprinting machine be sure to check on the I. M. E. line. These machines set the standards. . . for speed. . . for versatility. . . for rugged durability . . . for accurate, clear imprinting. You can find cheaper machines, but you can't find better dollar-for-dollar value in long-run economy and trouble-free, efficient service! Write today for our new catalog — it's yours for the asking. Department M.P.



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A quality symbol

[*Continued from page 90*]

from bleeding or from rubbing off.

Spalding's folder tag lives up to the requirement that such a merchandising device must present as much product information as possible. Detailed data inside the folder describe the craftsmanship that goes into the manufacture of Top-Flite clubs. On the back of the folder is an oval spot for writing in the stock number of the set and its price.

Because Spalding's registered clubs are sold in boxed sets of irons or woods, only one tag accompanies each set. It is attached to the driver in wood sets and to the No. 2 iron in iron sets before sealing the boxes.

Among the other companies which participated with Spalding in the tag-production run was the Hickok Mfg. Co., for its King Arthur line of men's belts, buckles and jewelry. A veteran user of tags, this packager reports that the new four-color tags had an "amazing effect" in tying together its over-all product-promotion program and in creating impact at the point of sale. An indication of this impact is the fact that the Hickok Mfg. Co. has ordered several hundred thousand additional tags.

The potential of expansion for economically produced four-color-process merchandising tags is spelled out in this observation by a leading industry association: "The modern trend toward four-color packaging places an ever greater selling burden on tags. As point-of-purchase promotional tools, four-color tags can spell the difference between sales lost and won, particularly where such tags must perform the duties of a sales clerk. The American consumer looks to tags for authoritative information on products; the more impressive the tag, the higher the volume of sales." ●

Adhesion of glassine

[*Continued from page 123*]

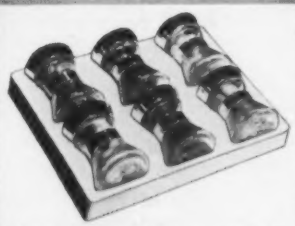
in order to minimize the oxidation of the adhesive film that occurs on aging, thus retaining the "stickiness" and strength of the "suction" bond for a long period of time.

There are several commercially prepared resin emulsions available for use in natural latex.

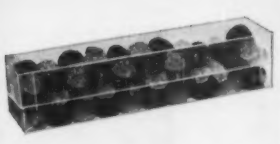
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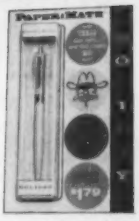
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Crystal clear acetate box mass produced for MRS. SNYDER'S Minty Mites



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should (a) give adequate protection to natural latex against oxygen and ozone, (b) be non-discoloring on aging and (c) act as a chelating agent against substances like copper and manganese that catalyze the oxidation of the latex.

There are several antioxidants available on the market. Unfortunately, the better ones tend to discolor on aging so that, in practice, one must compromise with a mixture of two or more antioxidants. The secondary amine and phenolic types are gaining wide acceptance.

The defoamer. Natural latex products have a great tendency to foam on machining, so that it is almost always necessary to incorporate a good defoamer. A large number of defoamers have been placed on the market, but few are wholly satisfactory either as to effectiveness or permanency. In general, it is best to add the antifoam just prior to using the latex compound. The amount used ranges from 0.005 to 0.2 per cent (5).

Since the adequate "wetting" of the wax surface is an essential prerequisite to achieving a good suction bond, it is important to use the right amount of, as well as kind of, defoamer. The addition of about 0.01% of a silicone type, together with 0.2% of a relatively less active defoamer, is usually satisfactory for most machining operations.

References

1. "Threshold Limit Values for 1957," A.M.A. Archives of Industrial Health, Vol. 16, pp. 261-265, Sept., 1957.
2. U. S. Patent application.
3. Warth, A. W. "The Chemistry and Technology of Waxes," 2nd Ed., Rheinhold Publishing Corp., 1956.
4. McBain, J. W., and Hopkins, D. G., *J. Phys. Chem. 29*, 188 (1925).
5. Noble, R. J., "Latex in Industry," *Rubber* Age, p. 286, (1953). ●

29th Packaging Show

The American Management Assn. reports that 326 exhibitors will participate in the 29th National Packaging Exposition, to be held April 4-7, Convention Hall, Atlantic City. It is expected to attract more than 25,000 packaging men. At the concurrent (April 4-6) National Packaging Conference, AMA reports, the emphasis will be on packaging for profit. ●



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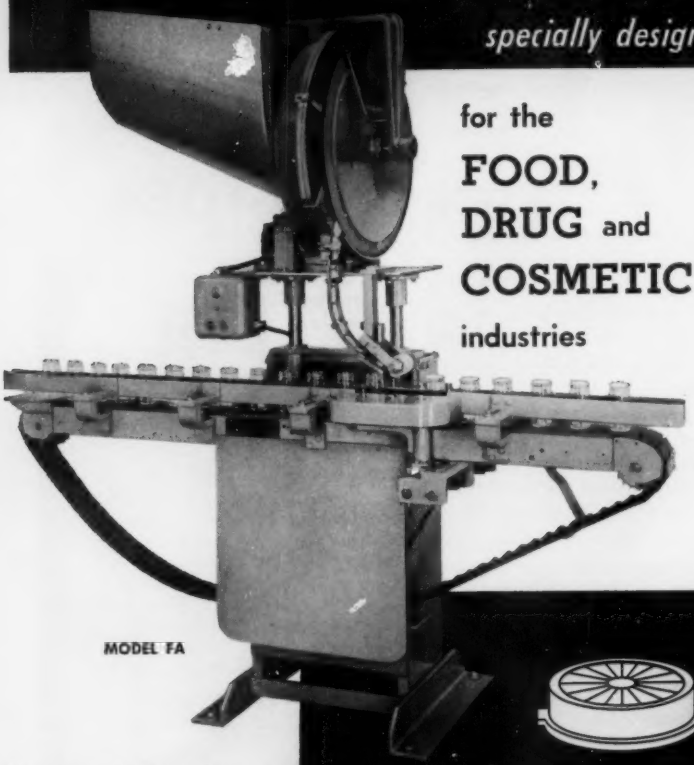
APPLICATIONS

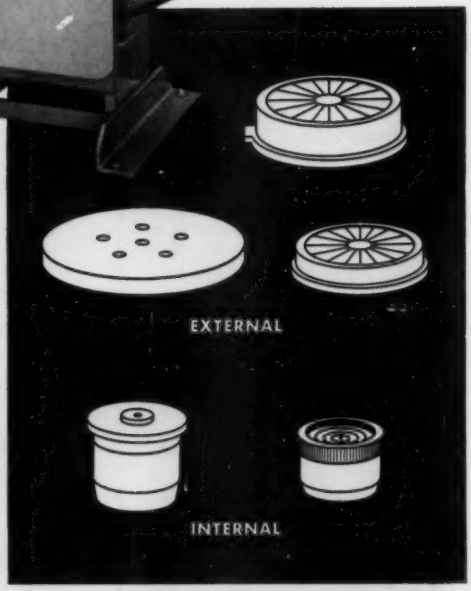
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'Spindle' carton

An intriguing corrugated shipping carton holding one dozen rolls of pressure-sensitive tape for in-store sealing of bagged produce has been



Exploded view shows "spindle" construction that holds rolls in place.

adopted by Adhesive Tape Corp., Brooklyn. The one-piece, die-cut "Handi-Pak" carton reportedly cuts product damage and pilferage.

Under the company's former packaging procedure, 96 rolls of tape were sent to supermarkets in a conventional shipper.

The new shipping and storage carton is designed to minimize both problems. Construction of the one-piece unit is such that extensions of the two upper top-panel flaps slip through slots in the other two top panels to form a "spindle" for the stacked, hollow-cored rolls of tape. This spindle adds rigidity to the shipper and keeps the rolls from rattling around during handling.

The fact that the new carton is fully reclosable after each roll is removed is an effective deterrent to pilferage, says the company. Also, because the carton contains only 12 rolls of tape (instead of 96), it is easier for the retailer to maintain an accurate stock inventory.

Six different colors of tape are packaged in each carton—blue, yellow, green, red, orange and white. A color calendar printed on the side of the carton suggests to the retailer that he use a different-color bag-sealing tape each day and record it on the calendar. If color is so recorded, it is pointed out, older stock can be instantly recognized and moved out first.

SUPPLIES AND SERVICES: Corrugated carton by Bell Container Corp., East Rutherford, NJ. ●

1. SELECT the items you want
2. CIRCLE the corresponding numbers on the post card
3. FILL IN the information requested
4. MAIL — no postage required

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MATRIX SHEETS. 4-page brochure lists available grades of wood graphic arts mat boards, giving specifications, recommended uses, operating instructions, prices and packaging specifications. Wood Flong Corp. (A-050)

PAPER & CARDBOARD PACKAGING. Illustrated 36-page brochure describes the production and research facilities, development work and products of this major producer of papers, containers, board, pulp and packaging. Mead Corp. (A-051)

IMPRINTING MACHINES. Illustrated 8-page brochure describes two imprinting machines, one a desk model which marks or counts labels, packages, etc. and the other a heavy-duty model for cartons, bags, wraps, etc. Pitney-Bowes, Inc. (A-052)

SIX COLOR PRESS. Illustrated 6-page brochure describes a new six color, single impression flexographic press. Features include variable speed drive to fountain rolls. Paper Converting Machinery Co. (A-053)

IMPRINTING PRESS. Illustrated folder describes and gives specifications for a press which overprints on cartons, labels, bags, etc. Two models; inside chase size 9 x 12 in. and 11 x 18 in. 7000 and 5000 per hour. B. Verner & Co. (A-054)

MASKING TAPE AND PAPER. Illustrated 4-page brochure shows how masking tape, masking paper and apron tapers are used in plant maintenance, packaging and shipping, etc. Shows three tapers and application methods. Also taper conversion kit and portable stand. Minnesota Mining & Mfg. Co. (A-055)

TAPE AND LABEL MACHINERY. Illustrated bulletin sheet describes a tape and label press which can be used as a 4-color tape press or 3-color die-cut label press, and a tape or label slitter and rewinder handling ¼ to 6 in. rolls. New Era Mfg. Co. (A-056)

RUBBER PLATE PRINTING. Illustrated booklet describes a line of equipment and services for rubber-plate printers. Pattern engravings, rubber plates, design rollers, plate cyinders, mounter-proofer machines. Also gear and cylinder selector chart and halftone screen guide. Mosstype. (A-057)

PACKAGING MACHINERY GUIDE. 32-page brochure describes the various machines that handle flexible packaging film. Describes the machines' individual performance features and lists properties of poly-coated films to be used with each. Print-A-Tube Co. (A-058)

FOOD PROCESSING EQUIPMENT. Illustrated brochure on walking beam units which can be furnished as coolers, pasteurizer-coolers and exhaust boxes. Each is fully described. Also describes a roll-through, which processes canned foods in a continuous line with slow reversing action. Horix Mfg. Co. (A-059)

CORRUGATED-CUSHIONED BAGS. Illustrated bulletin sheet describes line of corrugated-lined shipping bags of particularly light weight. All standard trade sizes. Second sheet gives case history. Sherman Paper Products Corp. (A-060)

PACKAGING MACHINES. Illustrated brochure describes five bag-packaging machines. Models include a fully contained automatic for free-flowing products, a net weight double scale, a single tube and a volumetric. General Packaging Equipment Co. (A-061)

POLYETHYLENE FILM. Illustrated 10-page brochure discusses the properties and uses of a line of polyethylene films. Samples. British Cellophane Ltd. (A-062)

PLASTIC SQUEEZE TUBES. Technical service bulletin, specification sheet and two folders discuss the advantages of polyvinyl chloride, polyethylene and linear polyethylene squeeze tubes, the company's design and testing services and typical applications. Plastic Container Div., Thatcher Glass Mfg. Co. (A-063)

STRIPPABLE COATINGS. Illustrated 4-page brochure describes a strippable, transparent, cushioning coating which is applied to tools, gauges, precision parts, etc. simply by dipping. Protects against rust, abrasion and corrosion. Bischoff Chemical Corp. (A-064)

TRANSFER LABELING. Illustated 4-page brochure describes a method and machine that transfer a rotogravure label design to film, foil or paper by heat and pressure. Up to 5¾ x 5¾ in. area. Said to combine the quality of direct printing with the flexibility of roll labeling. Samples. Dennison Mfg. Co. (A-065)

TAKE-OFF. Illustrated 4-page brochure describes and gives specifications for a take-off which handles extruded shapes from 0 to 5 in. Roller speeds 11.75 to 238 FPM. All four rollers are driven. H & T Machine Works, Inc. (A-066)

WIRE STITCHING. Illustrated 28-page catalog describes a line of machinery for wire stitching corrugated and solid fibre boxes and metals, and for bag closure, carding and labeling. Acme Steel Co. (A-067)

CORRUGATED PACKAGING. Illustrated 12-page folder outlines, in 8 case histories, typical instances of the application of creative designing to solve packaging and display problems with corrugated containers. Hoerner Boxes, Inc. (A-068)

ALUMINUM AND ALUMINUM FOIL. 10-page brochure gives properties and characteristics of a 99.992% pure aluminum, available in pig, ingot, billet, pellet, coiled sheet and foil, and of 3 alloys with magnesuim. Aluminum Foils, Inc. (A-069)

SET-UP MACHINE. Illustrated 4-page brochure describes a semi-automatic set-up machine for corrugated boxes. Handles up to 900 boxes per hour. Gaylord Container Corp. (A-070)

NUMERICAL CONTROL IN FLOW SYSTEM. Illustrated 4-page brochure describes an electro-mechanical component which counts units passing through a flow system. Registers lot plus total and accumulation, and can be used for remote control activation. Rapids-Standard Co., Inc. (A-071)

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A-072 A-073 A-074 A-075 A-076 A-077 A-078 A-079 A-080 A-081 A-082
A-083 A-084 A-085 A-086 A-087 A-088 A-089 A-090 A-091 A-092 A-093

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CARTON MARKING. Illustrated 8-page brochure describes a hand device which marks cartons, bags, drums, etc. with a single hand motion. Printing area 2 x 6 in. or 2 x 9 in. Interchangeable type. Algene Marking Equipment Co. (A-072)

THERMOPLASTIC CLOSURES. Illustrated 8-page brochure carries a reprint of an article entitled, "Why Thermoplastic Closures?", which discusses the economic considerations behind the trend to injection-moldable materials. Newark Die Co. (A-073)

ELECTRIC EYE MONITORING. 16-page pamphlet describes a system of electric eye monitoring, counting and measuring, using miniaturized units which fit formerly impossible locations. Diagrams of typical applications. Photomation, Inc. (A-074)

PLASTIC BOXES. 8-page catalog illustrates and gives specifications for a line of clear, two-tone and opaque plastic packaging boxes, in standard and special shapes. Harkin Affiliates, Inc. (A-075)

LABEL PAPERS. Folder describes and carries weight, finish and color samples of label papers which are supplied gummed by a process that prevents curling when temperature and humidity change. Ludlow Papers, Inc. (A-076)

PLASTIC JARS AND VIALS. Two illustrated 4-page brochures describe a line of threaded, shoulder, shell and beaded type plastic containers, clear or in transparent or opaque colors, for a variety of small products, and a line of prescription containers. Lermer Plastics, Inc. (A-077)

FILLING MACHINES. Illustrated 16-page and 8-page brochures and three data sheets describe a broad line of filling machines for cans, jars and cartons. Food Machinery & Chemical Corp. (A-078)

TWO-OUNCE COFFEE CANS. Illustrated 16-page booklet discusses the advantages of offering fresh-ground coffee in two-ounce (six cup) vacuum cans. American Can Co. (A-079)

WEIGH FEEDER MACHINE. Illustrated 4-page brochure describes an electronically controlled weigh feeder machine designed for accurate feeding of dry chemicals and other bulk materials. Gives specifications for the machine and all components and accessories. Syntron Co. (A-080)

TWO COLOR OFFSET PRESS. Illustrated 6-page brochure describes a new offset press which will take a 20 x 26 in. sheet and print two colors, one side, up to 8,500 sheets an hour. Common impression cylinder improves register accuracy. American Type Founders. (A-081)

TESTING EQUIPMENT. Two illustrated bulletin sheets describe a photoelectric liquid penetration tester for determining the sizing of paper, and a tack, adhesion and cohesion tester for determining the suitability of an adhesive to an adherend. Thwing-Albert Instrument Co. (A-082)

BAKERY BAGGING MACHINES. Illustrated bulletin sheet describes various models of a hand-bagging machine, each designed to handle baked goods in a certain size or shape range. Tele-Sonic Packaging Corp. (A-083)

WAREHOUSE LAYOUT. 8-page brochure entitled "Warehouse Layout: Narrow Aisles or Wide?" is designed as a guide to the advantages and disadvantages of both methods. Illustrations show how pallet trucks and stackers are being used to solve the problem. Automatic Tranportation Co. (A-084)

NET WEIGHER. Illustrated 4-page brochure describes and gives specifications for a net weigher said to weigh within hundredths of an ounce. Adaptable to either single or dual stream weighing. Pneumatic Scale Corp., Ltd. (A-085)

TWO COLOR PRESS. Illustrated 4-page brochure describes a two color press which combines rotary and flat bed operation. Two models; 15 x 20¾ in. and 21 x 28 in. Automatic wash-up. Heidelberg Eastern, Inc. (A-086)

MEAT WRAPPING. Illustrated 6-page brochure describes the wrapper, twister and heat tank used in wrapping meats in heat shrinkable films. Amsco Packaging Machinery Leasing Corp. (A-087)

BAG SEALING MACHINE. Illustrated 4-page brochure describes a semi-automatic machine which closes S.O.S. bags with two rolled folds and seals them with glue. Speeds as high as 60 bags per min. Mechanical drawings. Rene Boas & Assoc. (A-088)

FLEXOGRAPHIC INKS. Folder describes a series of high gloss, one-solvent-reducible flexographic inks, giving degree of adhesion to various films. Samples show two golds, each on bare film and on second color. Claremont Pigment Dispersion Corp. (A-089)

SPECIALTY PACKAGING PAPERS. Sample folder includes sheets of paper designed for plastic impregnating, moisture, flame and mold resistance, and chemical inertness. Also creped and two-directional reinforced. Illustrated descriptions. Booklet on company and engineering services available. Mosinee Paper Mills Co. (A-090)

COLOR CORRECTED LIGHTING. Illustrated 4-page brochure describes a line of lighting fixtures designed to simulate north sky daylight. Macbeth Daylighting Corp. (A-091)

AEROSOL VALVES & CONTAINERS. 12-page illustrated catalog describes a line of aerosol valves, containers and caps. Valve types include regular, fine-spray, foam, metered spray. Cross-sectional drawings. The Risdon Mfg. Co. (A-092)

SLITTER-REWINDER. Illustrated bulletin sheet describes a two-drum slitter and surface rewinder with top riding roll. Shear cut and/or score cut. Speeds up to 2,000 FPM. John Dusenbery Co., Inc. (A-093)

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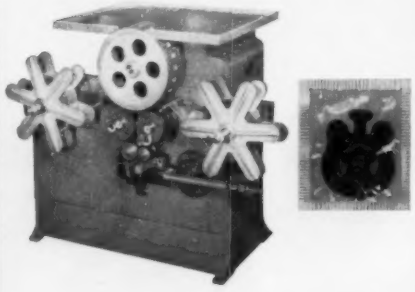
Shown is only one of many Wrap-Ade Unit Packagers. Other models available for packaging:

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- FOOD PRODUCTS
- HARDWARE

or any reasonably flat small product

Send us a sample of your product today for our prompt quotation.

This WRAP-ADE UNIT PACKAGER is designed primarily for low-to-moderate production rates using one operator to hand feed. A few of the items currently being packaged include bandages, capsules, bearings, novelties, etc.



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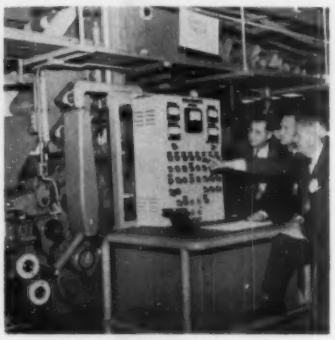
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SALES-SERVICE OFFICES IN ALL PRINCIPAL CITIES

New corrugated plant

Owens-Illinois recently opened its new corrugated plant on Chicago's far south side with expressions of optimism for the future of the packaging industry generally and corrugated in particular. The company looks for increased demand for corrugated containers by Chicago-area packagers, which the new plant will service in a 150-mile radius. After a three-year plateau followed by a recession drop, corrugated sales this year are running 13% ahead of 1958 and the company expects the material's biggest future growth to come from imaginative new uses.



Around control board of new O-I plant's corrugator (left to right): Hugh C. Laughlin, O-I vice president and Paper Products Div. president; Edwin D. Dodd, division vice president; Lester R. Edwards, O-I vice president-division general manager.

Hugh C. Laughlin, executive vice president of the parent company and president of the mill, multiwall bag and paper products division, outlined the company's changed philosophy toward corrugated since acquiring National Container Co. several years ago. With that acquisition has come an intensified marketing effort, more research and development and an improved distribution system, he said. Today O-I regards its integrated corrugated operation—from timber to completed box—as one of its areas of greatest potential growth.

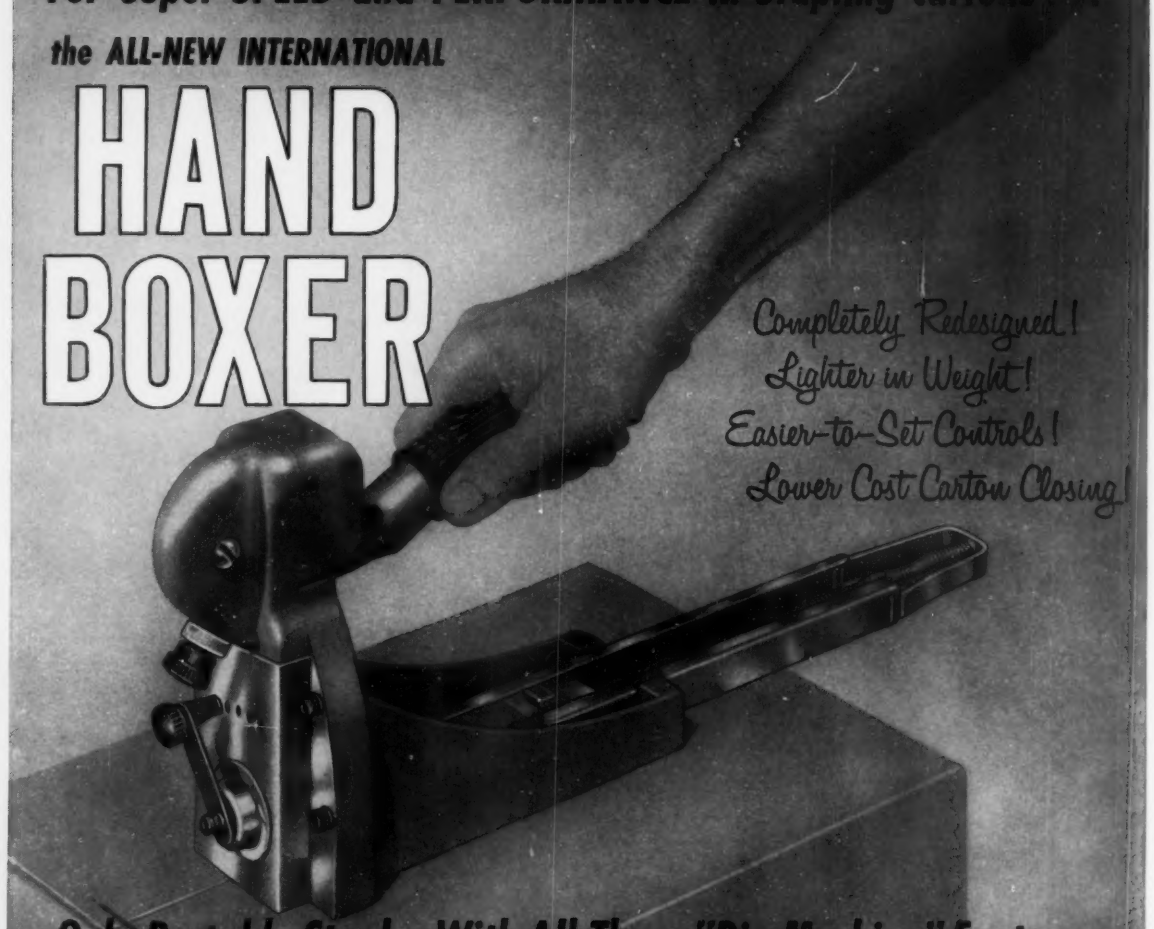
The new Chicago plant represents a growth investment. Presently overbuilt, O-I expects it will be running at full capacity within a year. The highly automated plant has capacity for 224,400 sq. ft. of paperboard monthly. It is equipped with an 85-in. Langston corrugator that is capable of turning out 650 lineal feet per minute. ●


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NEW COATED
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the ALL-NEW INTERNATIONAL

HAND BOXER



Completely Redesigned!
Lighter in Weight!
Easier-to-Set Controls!
Lower Cost Carton Closing!

Only Portable Stapler With All These "Big Machine" Features:

- **Penetration Adjustment!** For complete product protection a simple twist of dial accurately controls staple depth.
- **Clinch Control!** A turn of the quick-set knob adjusts the staple grip for secure packaging.
- **Floating Magazine!** Minimizes jamming and can be removed in seconds without major disassembly — an exclusive feature in I.S.M. machines.
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- **All-Aluminum Frame!** Precision designed for longer service and easy, lightweight operation.
- **Heavy-Duty Anvils!** Special high-tensile steel resists damage.

CALL YOUR INTERNATIONAL DISTRIBUTOR FOR FREE DEMONSTRATION or write for illustrated brochure . . .

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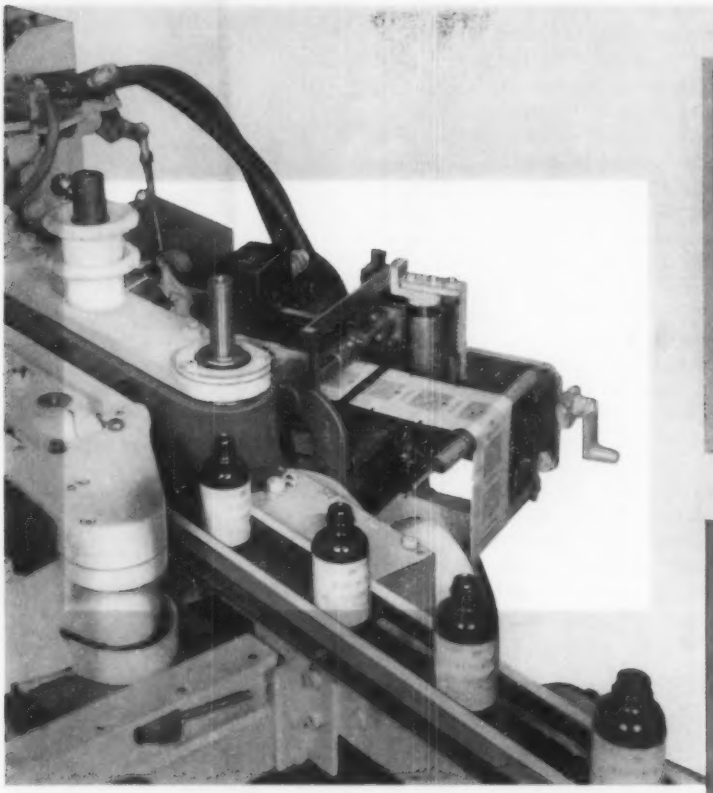
International Staplers

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P. O. BOX 270 • HERRIN, ILLINOIS

Originators of Carton Closing Staplers

New roll feed "no glue" labeling

Automatic verification, coding, protection and control





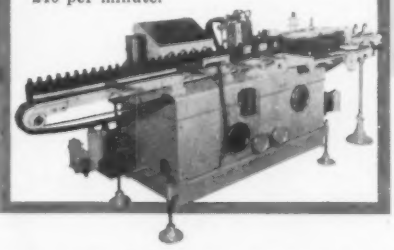
Shown here is the imprinting and coding head and electric eye controlled cut-off.

The Label-DRI Challenger complete with electric eye-controlled roll label feed. Speeds up to 120 per minute.

Also available:

The Semi-Automatic Pony Label-DRI. Speeds up to 60 per minute.

The Label-DRI Champion. Speeds up to 240 per minute.



Three New Jersey Label-DRI models now available

You get fast, fool-proof "no glue" labeling with these new roll feed Jersey labelers.

1 **Automatic label verification**—Once the first label has been checked, you know all other labels in the same continuous web must be the same.

2 **Automatic label coding** – Each label gets a clear imprint just before being applied to the container.

3 **"No-glue" labeling** – Labels in roll form are printed on thermoplastic label stock. You eliminate adhesive coating and are sure of more attractive label application.

4 **"Greater labeling efficiency"**– Eliminates mechanical separation of labels. No hopper to be set or reset to take care of label-cutting variations. No "doubling" due to "cling" caused by static electricity – ink offset – or dull cutting.

Check the Jersey Label-DRI that's best for you. Ask for details and a demonstration.

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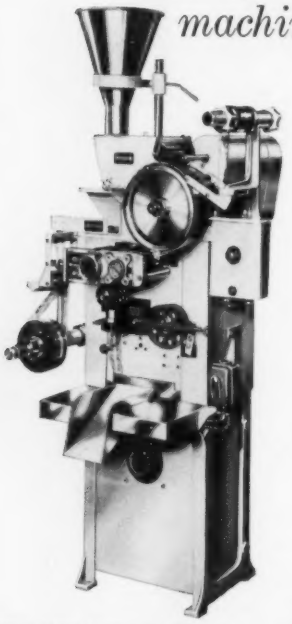
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KISAB machines can package anything: liquids, powders, granular substances, spices, tablets, lollipops, candy, ice cream sticks, hard products like combs, razor blades, tooth brushes.

KISAB machines operate with any packaging material: cellulose film, aluminum foil, cellophane, acetate, Saran, Pliofilm, cotton paper.

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PI food committee

An appeal to the Department of Health, Education & Welfare for more time in which to comply with the new Food Additives Amendment to the Food, Drug & Cosmetic Act may be the first official act of Packaging Institute's new Packaging Committee on Food Additive Problems, according to Charles W. Kaufman, president of the Institute.

The new group, formally launched at the recent PI Forum (see p. 102) received two directives from the Institute's board of directors: (1) to study all general problems arising from the new law and (2) to draw up a resolution for submission to Federal authorities requesting a general extension of time in which to submit petitions for clearance of packaging materials.

Some 77 packaging men from supplier and user companies heard Roger V. Wilson of Continental Can, launching chairman of the committee, turn responsibility for further activities over to the permanent chairman, Robert Johnson of the Kroger Co. Industry and association leaders described current work on additives problems in the can, plastics, film, paper-box, adhesives, printing-ink, folding-box, glass and fibre-can industries.

Close to 100 package users are expected to join the committee, which will be divided into industry subgroups for working sessions. •

Canadian show

Packaging's "Man of the Year" in Canada is Bram Dees, president of Hardee Farms International. At the 8th Canadian National Packaging Exposition held recently in Toronto, he received the Golden Award of the Packaging Assn. of Canada for pioneering the pre-packaging of farm produce.

At the three-day Exposition, staged at Toronto's Exhibition Park, more than 13,500 visitors saw new developments in packaging machinery, materials, techniques and point-of-purchase material displayed by 170 exhibitors in 67,000 sq. ft. of space.

Entries in the association's packaging and merchandising display competitions totaled 550, compared with 412 in 1958.

Packagers that received multiple



HOW PMC SOLVED IT!

When furnishing a dauber applicator with liquid shoe polish, there are two alternatives. One is to use a simple screw cap as the primary closure and to pack the dauber-cap in the carton alongside the bottle. The second is to use the dauber-cap as the primary closure thereby reducing the carton size and eliminating one cap.

Although the second method has obvious advantages, many polish manufacturers were forced to the first method because none of the available equipment could handle the dauber-caps at the high speeds required. Thus, automatic cappers were used for the simple screw cap in the production line and hand labor was required for inserting the dauber-caps into the cartons.

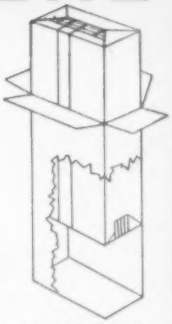
To solve the problem, many polish manufacturers now use the PMC Automatic Rotary Capper. This machine applies the dauber-caps automatically, guiding them into the filled bottles, and screwing them down with precisely controlled torque. In many installations, the PMC machine sorts the daubers from a bulk supply. All of these operations take place at speeds up to 300 per minute with no splashing or spilling of the liquid.

•

PMC is ready to help with your capping or inserting problem. Just write or call for further information.

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PNEUMATIC'S NEW FIN-SEAL PACKAGE



- Provides protection of heat-sealed envelope plus rigidity of carton.
- May be filled by weighing or volumetric methods — to any height up to 98% of capacity.
- Inner bag made with face-to-face fusing of currently used thermoplastic coated materials.
- Entire package produced on Pneumatic Double Package Maker combinations.

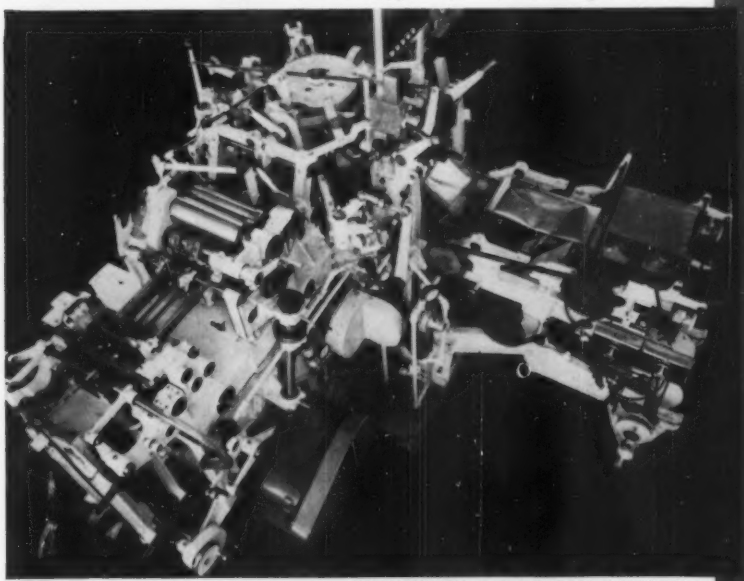
A container which has proved itself highly effective under most demanding conditions, the Fin-Seal package offers moisture protection within full tested range of lining materials.

The symmetrically made inner bag is formed with heat-sealed "fins", centrally located on one side, the bottom, and the top. Top and bottom fins are crimped under pressure with our unique plunger-action device for hermetically sealing folded side seam ends. Vertical or body seal on inner bag is in dead center to allow for mechanical spreading of lining top, during closure operations, without interfering with vertical seal.

This package consisting of a heat sealed protective packet "glove-tight" within a carton provides a means of shelf display and space for printed messages including brand name, recipes, etc. It is ideal for such products as gelatine and pudding desserts, dehydrated soups, dry cereals, pie crust mix, cake mixes and brown or confectionery sugar.

Pneumatic's Fin-Seal Package Maker machine handles all currently available heat seal coated lining materials. If desired, however, the unit may be furnished to run uncoated stocks. With this method a glue pattern is stenciled for side seam, top and bottom "fins" of the inner bag. Operations beyond this point are the same as when thermoplastic coated stock is used.

PNEUMATIC SCALE CORP., LTD., 88 Newport Ave., Quincy 71, Mass. *Also New York; Chicago; Dallas; Seattle; San Francisco; Los Angeles; Rockwell Pneumatic Scale Ltd., London N.W.2, England. Subsidaries: Delamere & Williams Co., Ltd., Toronto; Carbert Mfg. Co., Inc., Cambridge, Mass.*



THE NEW FIN-SEAL PACKAGE MAKER

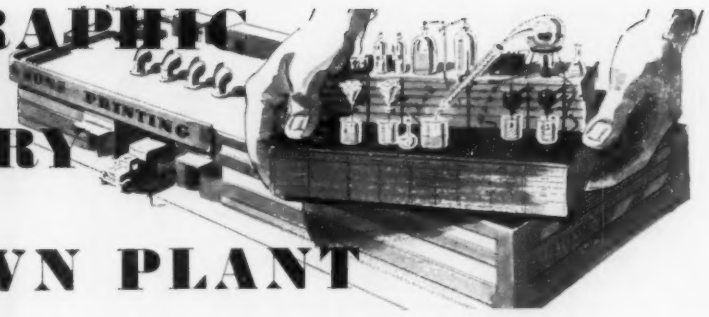


Write for Bulletin No. 137 giving full details on the new Fin-Seal package.

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● Wilsolite's Technical Service Department is prepared today, tomorrow, or at your convenience, to help you solve any problems you may have in printing with flexible materials.

Wilsolite-trained field technicians help you work out the answers by working right in your own plant . . . so that when they find solutions to your particular problems, you know the solution will work.

Write to Wilsolite for help in your technical problems. Rely on judgment which is based on experience in every phase of flexography.

GOODYEAR Buna N. Engraving Rubbers; Grey and Black; thicknesses 3/32" to 1/2", hardness range 20 to 80 durometer, including special inserts for register control. Also unvulcanized rubber in Red, Grey and Black *plus* Stickyback for plate mounting and Goodyear Related Products.

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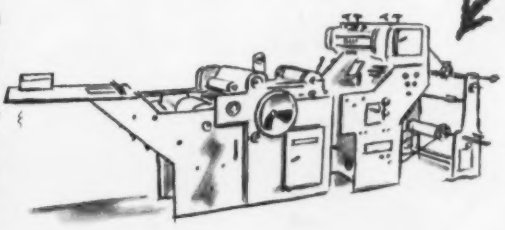
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awards were Glo-Hill Cutlery Co., Ltd., and the H. Corby Distillery, Ltd., two each. Suppliers cited for multiple awards included Bathurst Containers, Ltd., six; Hinde & Dauch Paper Co. of Canada, Ltd., and E. S. & A. Robinson (Canada), Ltd., four each, and Gair Paper Products Div., Continental Can Co. of Canada, Ltd., three awards. This was PAC's largest competition.

The association will hold its National Packaging Conference March 8-9 at the King Edward Hotel, Toronto, and will hold a reception April 5 at the Shelburne Hotel, Atlantic City, during the American Management Assn.'s National Packaging Exposition there. ●

Can looks to the future

[*Continued from page 95*]

(2) there is less chance of "leakers." Aluminum cans, of course, will not rust, which solves a frequent consumer complaint about tinplate and is important to motor oil, which may stand outdoors at filling stations.

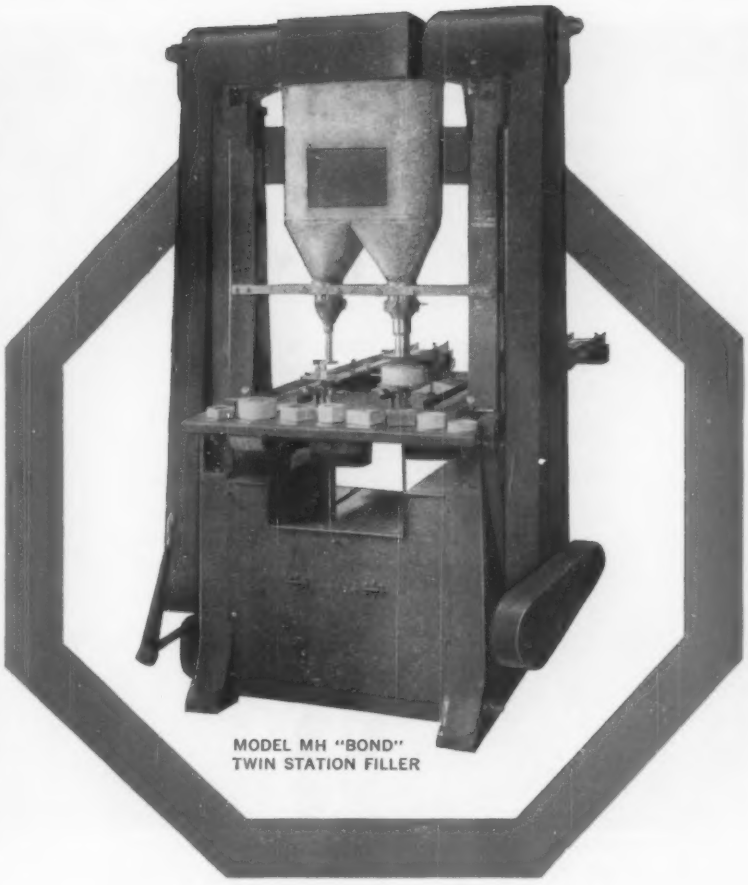
However, it has been found that most aluminum cans—like their tinplate counterparts—must be coated on the inside with special lacquers to prevent corrosion and product deterioration over long storage periods. In addition, some aluminum-can lids are also coated on the outside to prevent scratching and discoloration. And leading can experts do not recommend even coated aluminum for very high acid foods.

With their advantages and despite their drawbacks, a boom for aluminum cans in the '60s is predicted by many can authorities.

Aerosol cans are already taking hold. First on the market have been small, purse-sized aerosols for perfumes and drugs, but major can companies now have commercial aerosol cans ready for use at the same price as tinplate containers.

But there are a number of new big-volume uses for aluminum cans really imminent.

Several million 6-oz. aluminum cans for frozen citrus concentrates will be packed this season and distributed in large-scale market tests. These small cans look highly competitive because: (1) they can be made in the same wall thickness as tinplate cans, with the frozen juice providing the necessary extra struc-



MODEL MH "BOND"
TWIN STATION FILLER

Products and Containers Unlimited!

Drugs, chemicals, insecticides, cosmetics, spices, food products . . . fine powders, granules, grains . . . sticky powders or free-flowing materials . . . may be volume filled, gross weighed or packed — on the one machine — into almost any type or size of container, in weights from a few grams up to 10 lbs. or more. Running speeds up to 50 per minute with one operator. Other models available, semi-automatic and fully automatic. Write **US** for complete information.





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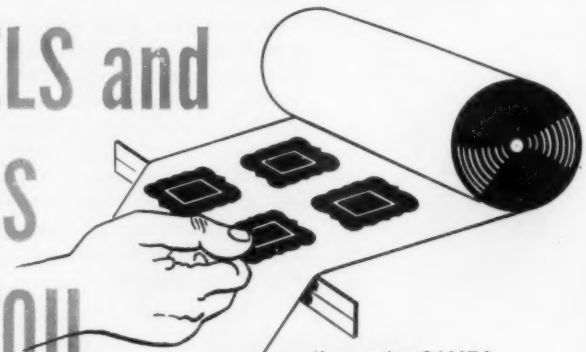
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tural rigidity and (2) in addition to providing all-round printing surface and reducing shipping weight, these aluminum containers speed heat transfer in freezing tunnels. Corrosion is not expected to be a problem, even with the acid product, because of the low storage temperature.

Also on test this year will be 6-oz. concentrate, tuna-fish and potted-meat cans with tinplate bodies and aluminum ends. The primary advantages of this container are in the weight savings, however small, for the packager and good scrap recovery from the lid-manufacturing operation for the can producers. Many other such combination cans may come into use, since they combine the best properties of each of the two metals.

Other packagers are now examining the possibilities of aluminum cans for baby foods. Here, the competition is with glass jars, since in this field the tinplate can has carved out a very limited usage, mainly in packaging strained meats.

Authorities say the aluminum can may come very close to competing, pricewise, with glass jars for baby products. And consumer acceptance of aluminum would, for the first time, permit widespread use of an opaque package, which is desirable to protect the finely comminuted foods from the deteriorating effects of light.

In this—and other packaging applications—new methods for opening aluminum cans are being developed. Even at a premium price, this greater convenience would be a prime sales point for the new cans because can opening has always been a sore consumer point, even with the development of better kitchen equipment. In Germany, a tear-tab opener is in use on an aluminum can for instant coffee. American can makers say this opener is not yet foolproof, but that it does suggest a possible approach to a really successful device.

These and other proposed applications are creating interest in aluminum cans today. And while broader packaging uses for aluminum are still tied to the "ifs" of technological development and metal price, the present determined approach by both packagers and producers points to a future for the can even brighter than its first 150 years of use. ●

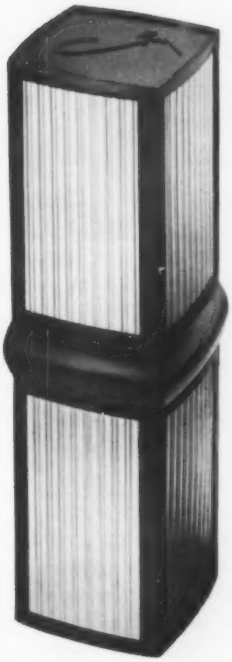


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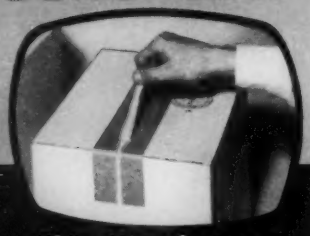
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Machinability of polyethylene film

[*Continued from page 118*]

which increased stiffness in the direction of the wrinkles and helped to eliminate curling. With these alterations in the feed section of the CMT packaging machine, medium-density polyethylene films fed easily to the folding section.

The folding section was next in line to receive attention. The feeders that were designed for cellophane did not produce a tight fold around the package when polyethylene film was used. The film would crumple back along the side of the package instead of following the folding grooves. The grooves on the cellophane folder were at an angle of 18 deg., open and had square edges. Folders with less critical angles—only 10 deg.—were made and installed; and the sides of the grooves were made to overlap in the direction of the fold to provide greater frictional grip on the film. With these changes, tight, neat folds were made with polyethylene films.

After the end folds have been made, the package changes its direction of travel and the tucks and folds are then made on the side. The tucking fingers for cellophane would not hold a tuck in polyethylene film until the fold could be made. Since polyethylene is more resilient than cellophane, the tucks would spring out too quickly to be caught by the fold. New tucker fingers were made which increased the interlap from ⅛ in. to nearly 1½ inches. This change effected a more positive transfer of the tuck from one finger to the other so that it could be retained until the side fold was made.

Mechanical contact sealers were installed to seal the ends and sides. A sealer of this type utilizes a lobed rotating disk designed so that the lobe surface rotates with the package as it travels by the sealing unit. This sealer produced a good, neat package seal.

It was found that the method often used to apply a tear tape to cellophane worked satisfactorily with polyethylene film. Socony 2310 wax was used. It was found, also, that a slight scoring made on the surface of the film was of considerable aid in effecting a neat tear. The scoring was accomplished by a riding device holding two knife blades, positioned slightly closer together than the width of the tape, contacting the film as it passed over one of the idler rolls. The depth of scoring was controlled by adjusting the distance the knife blades extended beyond the holder. The tear tape was applied over the scored surface. Tracking of the tear tape over the scoring was no problem and, in general, this method of application produced very satisfactory results.

Film extruded by the chill-roll method is oriented so that the film tears much easier longitudinally than in the transverse direction. Fortunately, the CMT machine was designed to apply the tear tape so that the film would tear in the longitudinal direction.

In all of the conversion equipment installed on this machine, only the sealers were Teflon coated. The machine was operated at the same speed and with the same conveyors as were used for cellophane. At the time the machine was purchased, it was being operated in regular production, wrapping cigarette packages with cellophane at the rate of 125 packages per minute. The same production rate was maintained with polyethylene film after the changes described. The results were very satisfactory from the standpoint of both appearance and quality.

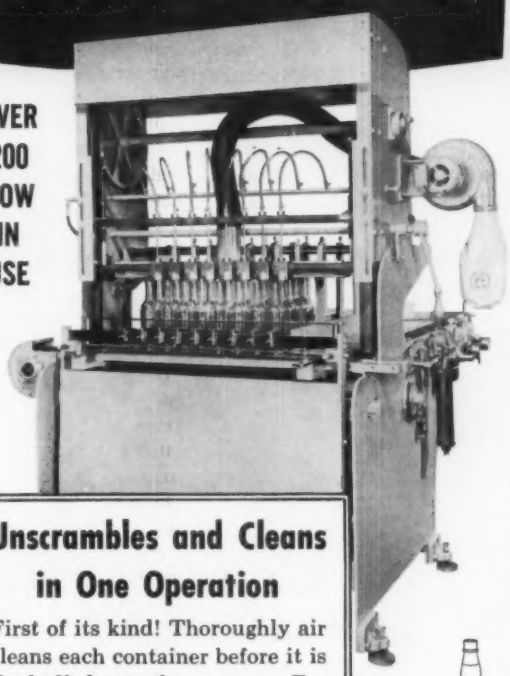
Because of the very good results obtained with medium-density polyethylene film on the FA machine in the previous study, most of the tests on the CMT machine were made with medium-density film. Low-density film was tried in the machine but, as explained earlier, the film had to be pushed and was too limp to handle properly.

Summary and discussion

To summarize, the results of these two studies indicate that films extruded of medium-density polyethylene resins have great promise for automatic-machine overwrapping. Films of this material can be run either on commercially available equipment designed for polyethylene film, or on converted machines originally designed for wrapping with cellophane. Medium-density polyethylene films possess high gloss, low haze, good clarity, good feel and, when properly treated, can be easily printed. These films are well suited

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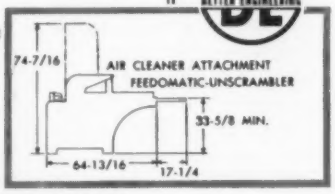
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for use on automatic wrapping equipment since they handle easily, making possible neat folds and good seals; and means of opening the package with a tear tape can be provided. All of the operations can be accomplished at existing production-line rates.

When the atmosphere is highly humid, static build-up generally is not of sufficient degree to create difficulty in processing polyethylene film through a wrapping machine. However, when the relative humidity is low, a considerable static charge is generated on the film and this charge must be eliminated before good machine handling will occur. If not eliminated, this static charge causes the film to stick to metal parts of the machine and makes continuous wrapping virtually impossible. The static-eliminator bars used on both machines proved to be effective in eliminating the static.

Since these studies were begun, medium-density polyethylene films have gained widespread popularity as an overwrap material for bread and for both paper and textile soft goods. Based on these studies, it appears reasonable to expect that these films will soon earn a large share of the overwrap market. ●

The surging '60s—paced by packaging advances

[*Continued from page 78*]

types of case packers and sealers, and (e) the self-sealing carton. The latter is becoming important for small production runs, since it takes the work out of carton sealing and reduces the necessity for carton-sealing equipment.

In the decade ahead, look for new materials, wider use of coatings and new machinery.

The shipping sack can be expected to show important gains in performance and economy on the basis of greater strength and function derived from (a) stretchable paper and (b) polyethylene. Also, heat-seal closures, special laminated structures (19), tear-strip openings, anti-skid coatings and better printing are significant. New machinery is making the handling of bags more efficient. For example, box-shaped bag constructions make higher stacking possible.

A prospective development that bears close watching is the use of higher-density polyethylene blends for shipping bags. It is reported that the already-established 10-mil gauge may thus be reduced to 7 or even 5 mils and that the polyethylene bag then would be competitive in cost with regular multiwalls.

The production outlook

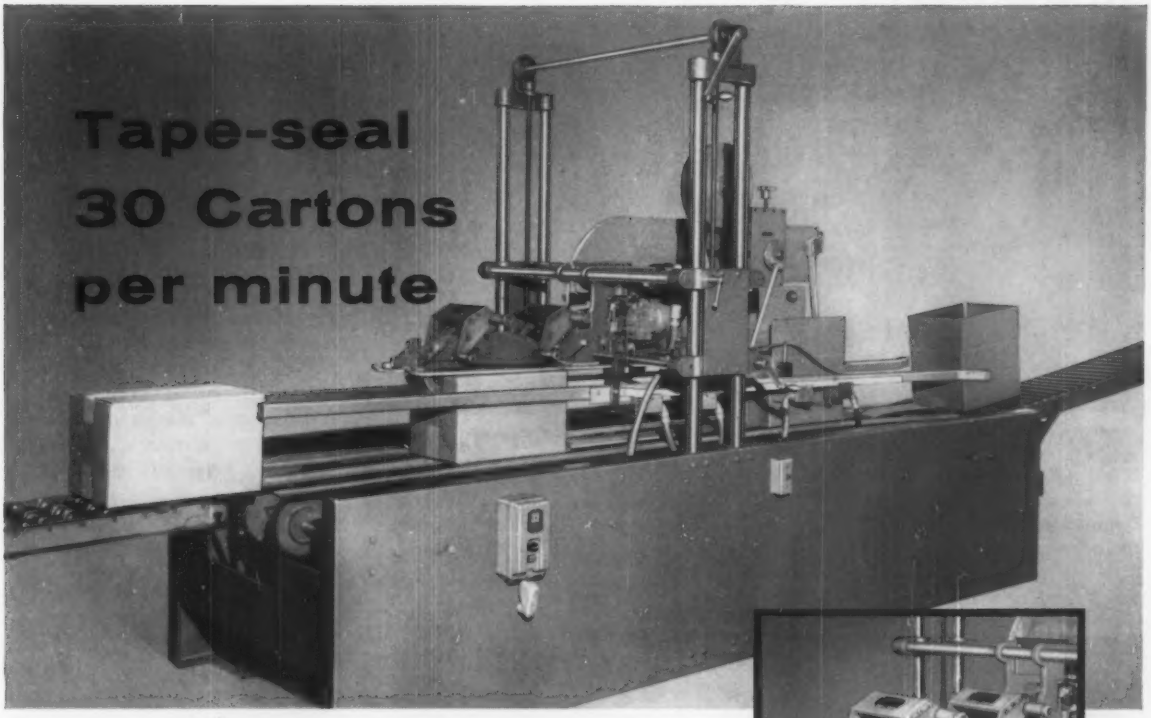
As readers of MODERN PACKAGING know, there has been a wave of progress in the development of packaging machinery to meet changing packaging needs (20). The packaging-machinery industry has a unique and critical relationship to packaging as a whole. While packaging is becoming one of our largest businesses, the packaging-machinery industry itself is relatively small. Actually, the value of packaging machinery produced annually is probably less than $200 million—but its importance far outweighs its monetary value.

In 1960 the availability of packaging machinery will deeply influence package planning and packaging strategy. As previously pointed out, 1960 may be the year of decision for wrapping machines to handle polyethylene as well as the other soft films.

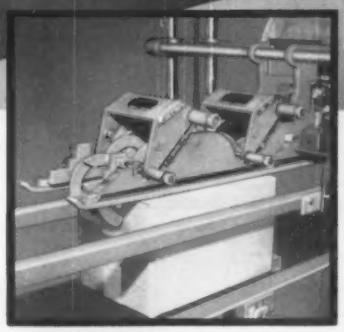
There is widespread demand for lines that will turn out 300-plus packages a minute. However, as speeds increase, heavier frames and more durable parts, more precisely engineered, are required and the cost of the machine has to rise. Moreover, as speeds increase, the packaging-labor factor is reduced to such an extent that further increase in speed may offer little reward in labor reduction.

Because of the trend to specialization and faster rates of change in packaging (which means faster machinery obsolescence), packaging-machinery manufacturers find that markets against which to plan new-equipment development have shrunk to 100- or even 50-machine markets compared with as many as 3,000 in former years. Under these circumstances, the question is, "Who will do the development work and how much, how soon?"

No matter from what angle packaging production is viewed, it can be seen as a more complex undertaking in the years ahead. Materials, pack-



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age types and successful applications are developing at a rapidly increasing rate. Packaging people are becoming more expert, more sophisticated in their specialties. Evidence of this can be seen in the appointment of packaging coordinators at staff level for many of the country's large concerns.

Similarly, in many other quarters there is evidence that packaging control is graduating from administration by committee to the highest levels of executive responsibility. This trend is likely to gain rapidly during the 1960s in view of the importance packaging must assume in moving trillion-dollar quantities of consumer and industrial goods to market.

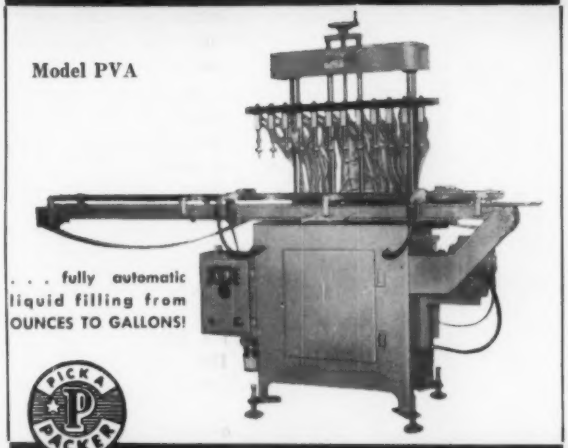
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(All of the following are from 1959 issues of MODERN PACKAGING.)

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2. "Big Push on Plastics," Oct., p. 109.
3. "Pouch-in-Carton for Frozen Foods," Oct., p. 144; "New Cold-Glued Wrapperless Carton," Oct., p. 124, and "High Frequency Carton Sealing," June, p. 131.
4. "GF's Bid: Frozen Instant Baby Foods," June, p. 114.
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9. "Papers for Packaging," *Encyclopedia Issue*, Nov., p. 96.
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12. "See-Through Card Pack," March, p. 84.
13. "Resurgence in Machinery," Nov., p. 124.
14. "83% Lighter in Plastic," Nov., p. 132.
15. "Transfer Labeling in the Round," May, p. 108.
16. "The One-Trip Bottle," Oct., p. 140.
17. "'Armor' Coating of Glass," Feb., p. 113.
18. "Sealer for Random-Size Cases," Nov., p. 149, and "New Work for Non-Skids," Aug., p. 102.
19. "Multiwall Super-Barrier," May, p. 80.
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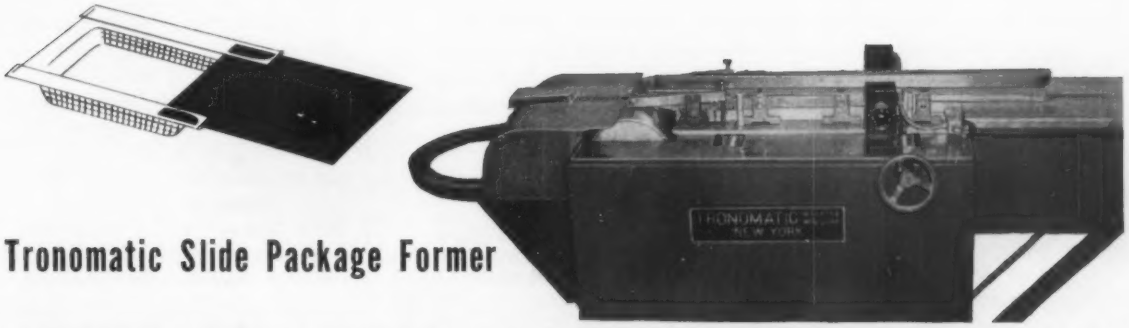
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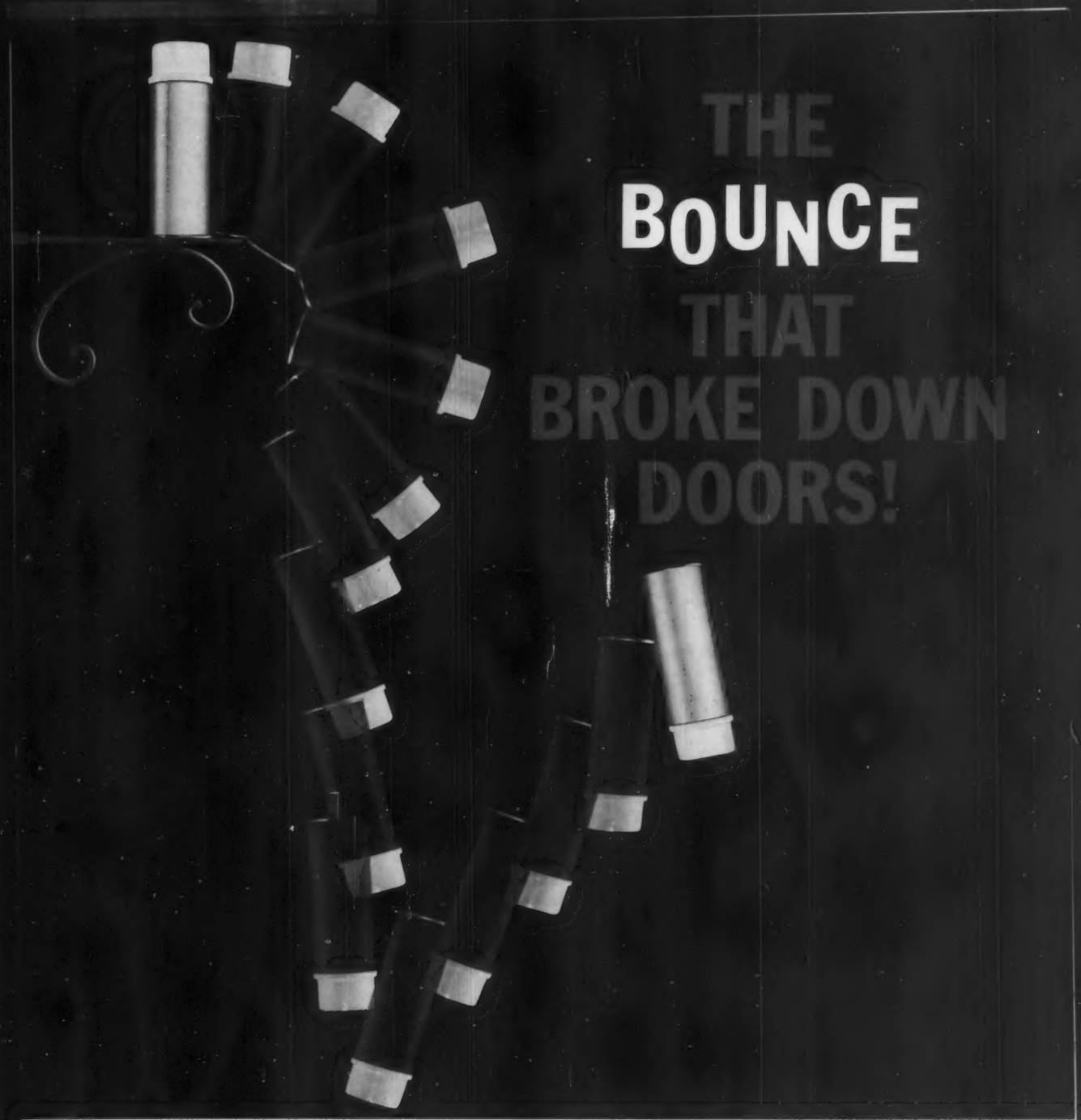
Growth of vendors

The growing use of vending machines for in-plant feeding of employees is bringing with it many new demands on food packagers. These "automatic cafeterias" drew much interest at the National Automatic Merchandising Assn. convention and exhibit in Chicago recently. They are making more and more economic sense to plant management, NAMA leaders report, but the surface so far has been barely scratched. To reach anything like full potential, in-plant vending machines and the food products they offer must advance well past the sandwich-and-coffee stages. Today's machines are more advanced than the products they sell.

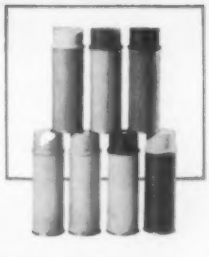
Vending-machine sales potential appears to warrant more food-packager attention. Total vended sales volume is up 7% this year over 1958. While the established cigarettes, soft drinks, candy and hot beverages still grab the big bulk of sales—85%—hot food is coming up fast. Yet nearly all food products exhibited for serving warm through vending machines are still in cans.

NAMA members are calling for new packaging materials and containers to make vended hot foods more attractive and palatable. These packages must at the same time meet the mechanical requirements of vending machines. There is a marked demand for individual colored containers in plastics and foils in a multitude of sizes. These packages must hold up under the high heats needed to warm foods quickly while, at the same time, have no injurious effect on taste and quality. The same requirements hold true for plastic films used to seal containers of prepared foods. The trend is away from closed machines, showing only labels above the selector buttons, toward the European type of visible display. This means that the package must do a better job of impulse selling in vending machines just as it does in supermarkets, the operators say.

The emphasis in hot coffee vending has advanced from the original liquid concentrates through the powdered "instant" type to the present fresh-brew machines. The latter are conceded to produce the best-tasting beverage. But physical demands on the cup are much increased, since water must be kept at near-boiling



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temperatures. Many varieties of polyethylene-lined paper cups were exhibited at the show. Automatic merchandisers appear to be favoring these premium-priced cups because of their high heat resistance.

Several of the new fresh-brew machines exhibited are designed for use with ¼-lb. metal vacuum cans. An unusual sandwich-toasting machine heats and toasts the sandwich right through its sealed cellophane wrapper and delivers a greaseless product in 6 seconds.

Vending machines generally have been upgraded in appearance. The familiar clutter of types and sizes is being replaced by banks of elaborate equipment set into panels and coordinated in color and design. Selection of products offered is being expanded.

Vending of higher-priced products should get added impetus through the perfecting of automatic money-changing machines. Many new models were exhibited at the show, including several that give accurate change for paper currency. ●

F&DA 'white list'

The first of the Food & Drug Administration's "white lists" of acceptable food additives, published in the *Federal Register*, Nov. 20, was aimed primarily at direct food additives, but included several materials —such as butane, nitrogen, propane, glycerine, caprylic acid and magnesium stearate—which are also packaging ingredients.

These materials, 182 in all, are now officially classed as "safe" on the weight of expert opinion and do not require further clearance. The list was circulated to some 900 qualified experts, of whom 355 responded. This procedure is provided for under the new Food Additives Amendment.

The list as circulated contained 188 chemicals. Pointedly omitted, at least pending further consideration, were: carbon black, charcoal, titanium dioxide, ultramarine blue, oleic acid and linoleic acid. Titanium dioxide is widely used as a whitening agent in clay coatings of paperboard.

Another white list identifying specific packaging additives which similarly are "generally recognized" as safe is due to be issued, but no date has been set. ●



". . . And you say Keystone designs plastic packages, too? I think Mr. Cleary will want to see you!"

If you're looking for "designed to sell" polyethylene or cellophane bags that are as effective as they are economical . . .

If you're looking for a single supplier that manufactures, converts, prints and designs in one operation . . .

Look to Keystone Packaging Service! Keystone has been a specialist in its field for over 20 years. And also a producer of polyethylene film, sheet, tubing, lay flat and gusseted—printed and converted.

For free bag and roll stock samples, quotations and design counsel (please send product samples), contact: Keystone Packaging Service, 555 Warren St., Phillipsburg, N. J.

KEYSTONE
flexible packaging
KEYSTONE PACKAGING SERVICE
555 Warren St., Phillipsburg, N. J.

Container outlook

Severe competition in many lines and gains for aluminum, plastics and paper containers at the expense of steel and glass as a result of strikes in those industries are predicted by the containers committee of the National Assn. of Purchasing Agents.

"Sound purchasing policies and good vendor relations are paying big dividends during this period," the committee notes. "Container improvements and new developments in containers are opening the way for the alert buyer to consider potential savings to his company."

In plastics, the committee notes, price wars threaten small converters, but expanded production facilities promise lower prices. The use of plastic cups to replace waxed cups is shaping up as "a real battle," according to the report. Also predicted is a 4-qt. refinery-sealed metal can for small-car motor oil.

The committee warns that a failure to settle the steel strike under the Taft-Hartley Act will create a critical supply situation by early spring.

On pricing, the report questions the justification of an anticipated increase in corrugated early in 1960, doubts that multiwall-bag prices can be raised after a recent 5% reduction and observes that price and procurement problems in glass should affect the plastics industry, though it expects continued heavy promotion of glass. ●

Public service cartons

A total of 5,808,000 specially imprinted corrugated shipping containers were used in the first half of 1959 to further public-service campaigns of the Advertising Council, according to the Stone Container Corp. Based on an estimate that a typical shipping container may be exposed to as many as 1,100 persons in its travels, as many as six billion people saw these messages, Norman H. Stone, chairman and president, reports. The Stone organization developed the program in cooperation with the Advertising Council. ●

OMISSION: Credit to Walter Landor & Associates, San Francisco 11, should have been included for graphic design of Old Fitzgerald package described on page 126, MODERN PACKAGING, Dec., 1959. ●

It can't be just "adequate"...



PACKAGE MARKING

either makes money or wastes it

Readable, attractive marking made by Markem machines on your boxes or labels helps them from the moment they're marked to the time they're used — and can even help future sales as well. Good marking speeds handling . . . reduces waste and packing errors . . . allows quick selection by customers . . . simplifies and encourages reordering . . . carries the "quality" message of modern package design.

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And a Markem marking method makes important "in-plant" savings as well. The right Markem machine, type and specialty ink working in your plant marks the *right* quantities at the right time — with savings in inventory, labor and delivery time . . . eliminates waste from obsolescence . . . handles "short runs" rapidly and economically . . . provides flexibility that allows *one machine to do a variety of marking jobs.*

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A WORD ABOUT The Charts, Tables and Diagrams in Your new MODERN PACKAGING ENCYCLOPEDIA Issue

Whenever possible, the factual, working information that makes up your new Modern Packaging Encyclopedia is assembled in a chart, table or diagram. In your 1960 issue, you'll find over 70 of these "showcases," putting highly useful information on display and making accurate comparisons easy.

Among this year's five large fold-out charts are two that are new. One is a list of contract packagers, classified geographically. The other, "Check Points for Package Planning," is a complete blueprint of all the steps necessary in developing a successful package.

An outstanding example of usefulness is the "Cost Table on Papers, Films and Foils." This valuable compilation is among the many which could not be duplicated except at prohibitive cost.

Use the charts, tables and diagrams in your Modern Packaging Encyclopedia as guides to sharper efficiency, improved packages and new sources of profit. The essential information is yours at a glance!

Here are a few typical titles of charts, tables and diagrams you'll find indexed on page 6:

CHARTS

Standard Tests for Packaging Materials

Containers - Production, Dollar-Value, End-Uses, etc.

Heat Sealing Characteristics of Materials

TABLES

Annual Gift Market

Characteristics of Molded Plastics

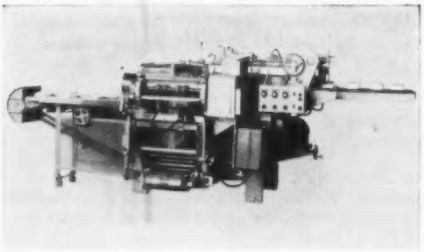
Acceptable Ingredients for Food Packaging

DIAGRAMS

Sheet Forming Techniques

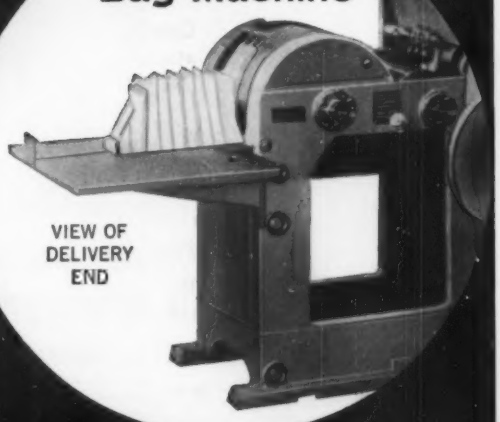
Equipment for Coating, Laminating, Slitting, and Sheeting

Label Application Methods



THE SOLUTION TO WRAPPING FRAGILE BAKED GOODS . . . QUICKLY, SAFELY! Battle Creek's Model 43L has been designed specifically for the bakery with the problem of packaging small bakery products . . . such as cookies, iced cupcakes, turnovers and pastries. A machine capable of wrapping from 40 to 70 packages per minute, the Model 43L handles each package gently, smoothly and quickly. Package sizes may vary from 3" x 1¾" x ½" to 10" x 4½" x 4". Wrapping material may be printed or unprinted cellophane, with or without separate top labels. Each package is a miniature bakery "showcase." **Battle Creek *"Continuous Flow"* Packaging Machines, Inc., Battle Creek, Michigan.**

MATADOR
Bag Machine



VIEW OF DELIVERY END

For converting kraft paper, mounted aluminum foil, glassine, sulphite, etc. in a wide range of sizes into flat and square bags.

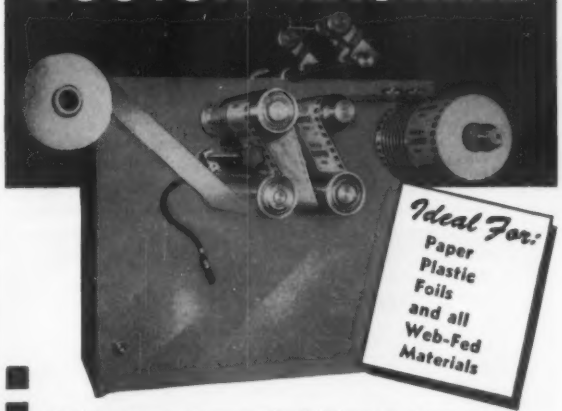
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Built-In Efficiency Features:

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Mfrs. of Slitters, Web Guides, Rewinding and Constant Tension Equipment

Big packaging week in New York

[*Continued from page 109*]

Gas Blowing of Processed Cheese—DR. D. K. ALPERN, *associate professor, Brooklyn College, and director of technical service, Foil Div., Revere Copper & Brass.* Significant in view of the Food and Drug Food Additives Amendment was the procedure reported by Dr. Alpern to determine that hydrogen and carbon dioxide gasses forming inside certain packages of gruyere and cheddar cheese were not caused by a condition of the packaging materials used, but rather to certain bacteria in the cheese itself. Prescribed remedy: more rigid control of cheese making.

Wrapping Bakery Products in Polyethylene Film—H. E. HILDEBRAND, SR., *vice president, engineering, Continental Baking Co.* We are packaging 880,000 units a week in polyethylene film, yet it will take a little longer before polyethylene wins general acceptance for the packaging of bread, according to Mr. Hildebrand. Sealing problems have not yet been completely overcome. There are variations in thickness across the sheet and differences in pressure against folds of the film. The softness of bread also presents a difficulty in contrast to sealing against a rigid surface.

Cost Reduction and Convenience Feature for the Single-Serving Soluble-Coffee Package—C. C. ELSESSER, *section head, General Foods Corp.* A 32% saving in packaging materials and a 45% reduction in over-all packaging cost for single-service instant-coffee packets were reported by Mr. Elsesser as the result of General Foods' research to find an efficient, economical structure of paper, polyethylene, foil and vinyl that could be produced on conventional equipment. At the same time, the laboratory was able to equip the package with a multi-strand dacron filament tear strip.

A Break-Through in the Frozen Food Field—T. W. RUSSELL, *sales manager, mechanical packaging, Ace Carton Co. Branch, Weyerhaeuser Co.* An adhesive developed for application over the wax coating of frozen-food cartons to provide wrapperless cartons was described by Mr. Russell, who presented a color movie illustrating the equipment used for its application and its advantages: economy, a tight seal, neater-looking packages, easier for the consumer to open and with no cooking directions torn off and lost in the wastebasket. The cartoner is adjustable to many sizes and is capable of producing up to 34 packages per minute.

Closure seminar

Chairman, JOHN GRAHAM, *Schering Corp. Moderator,* HERBERT WHEATON, *American Flange Co.*

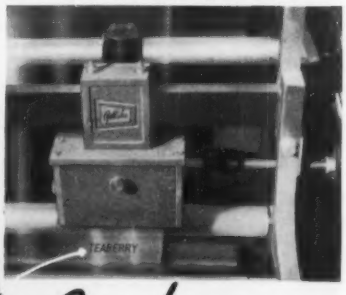
The New Package . . . Coordinating the Efforts of the Component and Machinery Suppliers with Users' Internal Needs Through Purchasing—FRED PICKERELL, *senior buyer, Schering Corp.* When the all-plastic ophthalmic package made its debut in pharmaceutical marketing, Schering already had what many felt was the ultimate in dropper bottles. When we had all of its problems licked, Sales brought us a competitor's all-plastic ophthalmic package and said, "We want." Management said, "They shall have." A brief study of costs indicated the package would be feasible if a greater degree of automation than was used at that time was possible. Engineering felt that it was not only possible, but necessary. Mr. Pickerell emphasized the need for extremely close cooperation with the buying company and its potential suppliers on a program such as this.

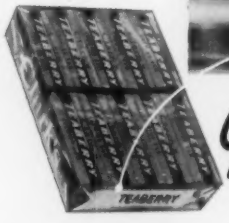
The New Package . . . Its Plastic Bottle, Cap and Dispensing Plug—ROBERT MUSEL, *chief design engineer, Wheaton Plastics Co.* To handle the various components comprising a package automatically, it is necessary to manufacture them within very tight dimensional limits and rejects must be practically nil to prevent machine stoppages. This requires a re-education of the personnel involved in fabrication of tooling, as well as those in the production and quality-control departments. A revolution in packaging has been in the making for the past few years and automation is becoming a reality to fulfill the need for mass pro-



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duction. It will be possible to process plastics packages automatically at higher speeds as compared to glass because of better dimensional control and freedom from breakage. The molding equipment and accessories now on the market allow the molder better control of the molding process and give freedom in the design of more automatic molds.

The New Package . . . Its Tamperproof Secondary Closure—LEE ROHDE, *West Co.* Schering was going to package an ophthalmic solution as a sterile product and they desired to have some form of a metal tamperproof secondary closure that would help assure sterility from the time Schering filled and capped the container until the user opened it.

As far as we know, this was the first plastic package that had a secondary metal tamperproof seal applied to a plastic finish. Schering requested that this cap be designed so that its removal could be made as easy as possible. They also informed us that they wanted to apply this cap by an automatic sealing machine and it would, therefore, have to be sufficiently strong so as to not be bent or distorted in the hopper and affect its automatic application.

The New Package . . . and the Machinery Needs for It's Successful Creation—JOHN HENDERSON, *Chase Equipment Corp. The* Schering Co. set a new note in their approach inasmuch as they were prepared to pay a substantial amount for an engineering survey. If the whole thing had finally proved impracticable, then they would have lost their money; on the other hand if it were a success, the amount would be taken as a partial down payment, which of course it finally became. If you are bringing out a new package, particularly if it is somewhat unique in its design, be sure that you are as near complete in your final acceptance of it as possible and be positive you are fully conversant with the characteristics indigenous to mass component production of either plastic or glass, before you ask any equipment maker to build a machine.

The Designer Approaches the New Package—MAXWELL ROGERS, *Avon Products, Inc.* The design of a package should provide a oneness in appearance and the components, such as the closure, should not stand out from the over-all design and be noticed as separate items. The designer is especially fortunate today in the wonderful variety of new materials offered. These enable him to achieve design unity that makes the container pleasing in over-all appearance. Design-wise, closures can be made so inviting that they can be thought of more as "openers" rather than closures.

The New Package . . . Recent Trends and Future Developments in Closures—E. C. EMANUEL, *manager, customer technical services, packaging materials operations, Armstrong Cork Co.* Recent developments in metal caps, thermosetting and thermoplastic closures make more attractive design and surface treatments practical. Redesign of closures achieves proper performance on high-speed lines without jamming or distortion. Plastic closures with high impact strength and resistance to shock on high-speed machines are being developed. New thermoplastic materials are being studied for closure application so that when the cost is brought into line, these materials will be available for the manufacture of closures.

Wednesday luncheon address

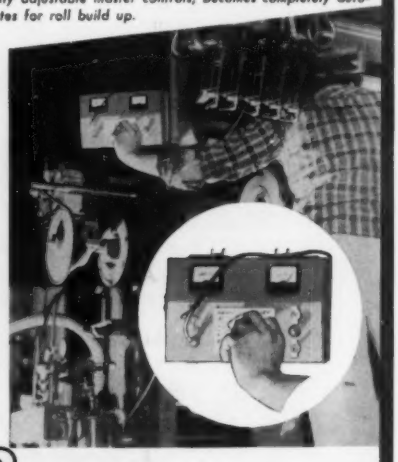
Safety of Packaging Materials—J. KENNETH KIRK, *Assistant to Commissioner for Regulation Making, Food & Drug Administration, Dept. of Health, Education & Welfare.* Initial tough talk by F&DA on enforcement of the new Food Additives Law was necessary because some segments of industry have not adopted a forthright attitude toward compliance with the law. Packagers should get away from the idea that there is no problem because migrants occur in small amounts. "De minimus" and "pharmacologically insignificant" are nice words, but F&DA will not solve the problem with semantics, Mr. Kirk stated. Only after complete data on acute and chronic toxicity are available can F&DA consider the matter of tolerances, though this does not imply the necessity for life-time studies on each item. ●



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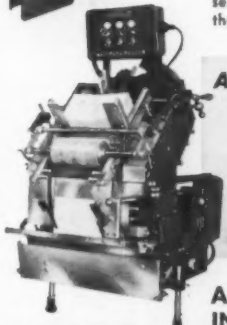
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EASIEST TO OPEN
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For sealing, header-labeling, imprinting, punching, code dating bags made of cellophane, polyethylene, saran, etc.

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Models for straight sealing bags and pouches of all heat-sealable materials.

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STYRENE AND POLYETHYLENE scrap or surplus wanted. S. H. Kane Co., Farmingdale, N. J. We. 8-9111.

Help Wanted

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Positions filled and secured. A confidential Nationwide Service for employers seeking personnel and individuals seeking new positions. Inquiries invited. Reply to Graphic Arts Employment Service. Est. 1952. Helen M. Winters, Manager: Dept. PAC-1, 307 East 4th Street, Cincinnati 2, Ohio. Phone CHerry 1-2202.

POLYETHYLENE SALESMAN — Rapidly growing polyethylene film extruder requires permanent representative in Southeast. Prefer man who can center operations in Atlanta or Charlotte. Excellent opportunity for man who knows this industry and area. Reply in confidence giving full details. Box 1170, Modern Packaging.

PACKAGING DIRECTOR—A real opportunity for a man with proven administrative abilities to supervise our Packaging Department. As a major cosmetic manufacturer, packaging is of primary importance in the company's overall marketing program. Experience in package design and construction required. Experience in surface design helpful, but not necessary. Send complete resume and salary requirements to Box 1173, Modern Packaging.

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NEW PRODUCTS MANAGER—Connecticut Location. We are in the business of manufacturing plastic packages for consumer products and require a man to fill this staff position, reporting to the President. A college degree and three to five years' experience in plastic product development are essential. Knowledge of retail marketing problems is of great importance as is the ability to meet and discuss problems with people of high calibre and responsibility. Creativity and idea ability are paramount and would ideally be supplemented by some working knowledge of extrusion, molding, bottle forming, etc. If you meet these qualifications, please write, in confidence, to the President, Box 1176, Modern Packaging, including salary information. Our employees know of this vacancy.

RESEARCH AND DEVELOPMENT MAN—Mechanical Engineering background. Industry experience helpful but not essential. New York Metropolitan area corrugated container manufacturer. Excellent opportunity for forceful, creative individual. Send resume to Box 1179, Modern Packaging.

ASST. PLANT MGR.—PLASTICS—Exceptionally fine position with young, Southern New England growth company for young engineer or chemist. Require thorough technical and administrative background in injection molding. We are looking for a bright young man on way up who is ready for the big step. Inquiries treated confidentially. Reply Box 1177, Modern Packaging.

PACKAGING LABORATORY DIRECTOR—This position with our newly established Corporate Packaging Development Group requires an aggressive, creative man with sound technical ability. Emphasis will be on long-range pioneer packaging and development of improved marketing and consumer features. Located at the new research center in Tarrytown, New York, he will direct packaging operations there. He will have close contact with both marketing and packaging personnel in our various divisions, as well as with the packaging industry. Starting salary $14,000 range, dependent upon experience and qualifications. Submit detailed resume to A. B. Morris, General Foods Corp., 250 North Street, White Plains, New York.

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WANT TO RETIRE OR NEED management help?—Top management executive desires to invest in and join your company with option to increase holdings. Experience includes several industries, last 8 years in the packaging industry. Looking for challenging opportunity to increase your profits through modern business techniques. Background and education in finance, costs, standards and budgets—CPA. Address Box 1171, Modern Packaging.

PROVEN SALES AND MANAGEMENT record—Paper, folding carton and converter background. Now contacting packaging industry with unmounted, laminated, printed foils and containers. Reached limit of advancement due to peculiar situation. Married. Desire management or sales with management potential. Detailed resume on request. Reply Box 1172, Modern Packaging.

PACKAGING SALES REPRESENTATIVE—Fifteen years experience various industrial packaging materials. Sold direct, supervised sales through distributors, U.S. and Canada. Wide acquaintance among national packaging personnel both industry and government. Considerable government contact experience. Active in leading national packaging associations. College graduate. Desires mill representative position. Located in East. Move if necessary. Reply Box 1178, Modern Packaging.

Miscellaneous

NEW PATENTS, PROCESSES, PRODUCTS wanted—Well financed industrial firm will buy outright, or develop and market on royalty basis. We are particularly interested in patented ideas in the chemical or packaging fields. If the item is not patented, disclosure will be received only on a nonconfidential basis. Your written reply will receive most careful consideration. M. M. Fisher Associates, Dept. Q, 79 West Monroe Street, Chicago 3, Illinois.

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Compact, *non-refillable* dispenser equipped with metering valves and polished brass or aluminum spray domes.



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Refillable, lipstick-size dispenser holds 250 to 300 metered sprays.

RISDON VANITI-MIST™





Refillable container with metered or non-metered spray valves in one ounce and two ounce stock sizes.





81-120

For further information contact

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January 1960

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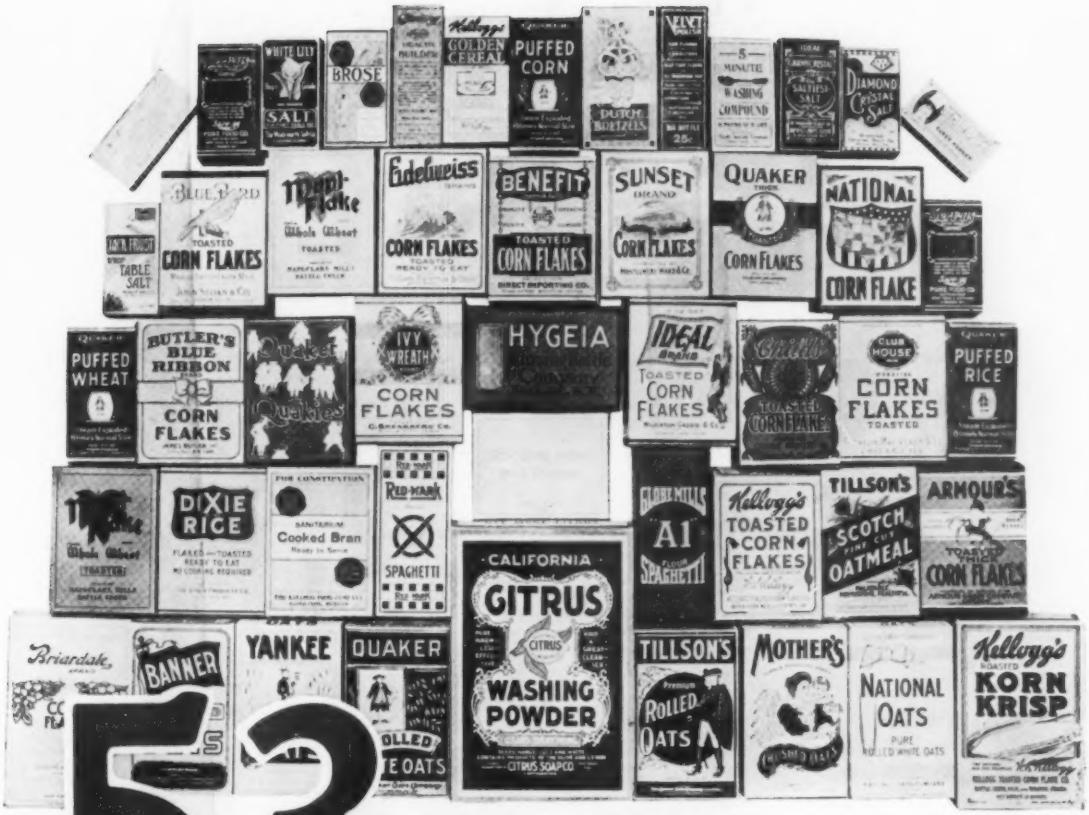


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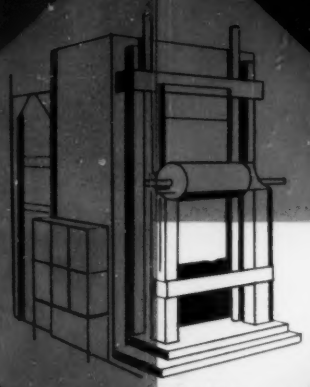
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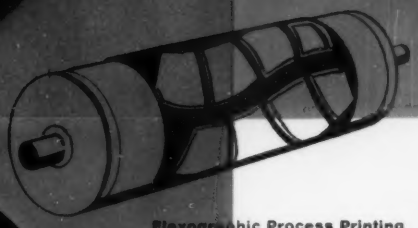
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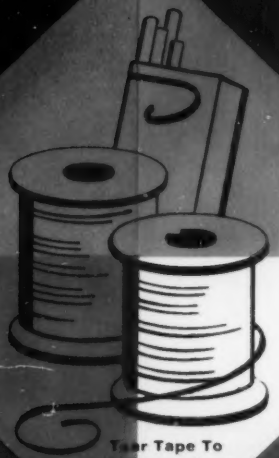
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